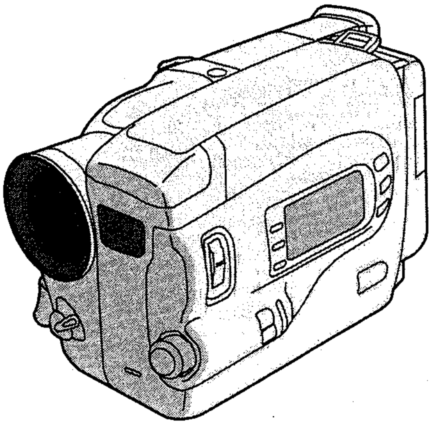
JVC

SERVICE MANUAL

CAMERA-RECORDER/PLAYER

GR-SZ7U



The Logical Choice Super VHS

S-VHS-C

Hi-Fi STEREO

SPECIFICATIONS

GENERAL

Format	: S-VHS/VHS NTSC standard
Power source	: DC 6 V ⎓
Power consumption	: 8.5 W
Signal system	: NTSC-type
Video recording system	: Luminance: FM recording Color: Converted sub-carrier direct recording Conforms to S-VHS standard
Hi-fi audio recording system	: Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels	: 2 Hi-Fi audio channels 1 normal audio channel
Cassette	: S-VHS-C / VHS-C cassette
Tape speed (SP)	: 33.35 mm/sec (1-5/16 ips)
(EP)	: 11.12 mm/sec (7/16 ips)
Recording time Max. (SP)	: 30 minutes (with ST-C30 cassette)
(EP)	: 90 minutes (with ST-C30 cassette)
Operating temperature	: 0°C to +40°C (32°F to 104°F)
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to +50°C (–4°F to 122°F)
Weight	: Approx. 820 g (1.8 lbs)
Dimensions	: 103 (W) x 114 (H) x 185 (D)mm (4-1/16" x 4-1/2" x 7-5/16") (incl. viewfinder)

CAMERA

Pick up	: 1/3"-format CCD
Minimum required illumination	: 2 lux (0.2 fc) (F1.2)
Illumination range	: 2 to 100,000 lux (0.2 to 9,300 fc)
Lens	: F1.2, f = 5 to 50 mm, 10:1 power zoom lens* with auto iris and macro control, filter diameter 46 mm
Viewfinder	: Electronic viewfinder with 0.7" color LCD
White balance adjustment	: Auto/Preset standard/Manual adjustment

VIDEO

Output	: 1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output	: –8 dBs, 1 k-ohm (via AUDIO out connectors)
Microphone input	: –68 dBs, high impedance, unbalanced with 3.5 ∅

HI-FI AUDIO

Wow and flutter	: Less than 0.005 % WRMS

MULTI AC CHARGER/ADAPTER (AA-V35U) SPECIFICATIONS

Power requirement	: U.S.A. and Canada: AC 120 V∿, 60 Hz Other countries: AC 110 to 240 V∿, 50/60 Hz
Power consumption	: 23 W
Output	: DC 8.5 V ⎓, 1.6 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system	: Constant current, peak detection, timer controlled
Dimensions	: 98 (W) x 46 (H) x 138 (D) mm (3-7/8" x 1-13/16" x 5-7/16")
Weight	: Approx. 390 g (0.86 lbs)

CASSETTE ADAPTER (C-P6U) SPECIFICATIONS

Dimensions	: 188 (W) x 25 (H) x 104 (D) mm (7-7/16" x 1" x 4-1/8")
Weight	: 240 g (0.53 lbs)
Accessory	: "AA (R6)"-size battery x 1

PROVIDED ACCESSORIES

Multi AC Charger/Adapter	AA-V35U
Battery pack	BN-V12U
AUDIO out cable	
VIDEO out cable	
S-VIDEO cable	VC-V44U
Editing cable	
Cassette adapter	C-P6U
Lithium battery	CR2025
Shoulder strap	
Remote control unit	RM-V706U

For optional accessories, ☞ P. 54

***Note:** Up to 100x digital zoom magnification.

Specifications shown are for SP mode unless otherwise specified.

E.&O.E.Design and specifications subject to change without notice.

COPYRIGHT © 1994 VICTOR COMPANY OF JAPAN, LTD.

No. 86235
June 1994

TABLE OF CONTENTS

Section Title Page

Important Safety Precautions

INSTRUCTIONS

1. DISASSEMBLY

1.1 SERVICE CAUTIONS 1-1
1.1.1 Precautions 1-1
1.1.2 How to read the disassembly and assembly... 1-1
1.1.3 Connection of the wires 1-1
1.1.4 Main screws to deal with disassembly/assembly 1-2
1.2 DISASSEMBLY/ASSEMBLY OF CABINET PARTS 1-2
1.2.1 Disassembly flow chart 1-2
1.2.2 Disassembly method 1-2
1.3 DISASSEMBLY/ASSEMBLY OF CAMERA PARTS 1-6
1.3.1 Disassembly flow chart 1-6
1.3.2 Disassembly method 1-6
1.4 DISASSEMBLY/ASSEMBLY OF DECK PARTS 1-7
1.4.1 Disassembly flow chart 1-7
1.4.2 Disassembly method 1-7
1.5 EXTENSION CABLE CONNECTION 1-9
1.6 REPLACEMENT OF CASSETTE HOUSING 1-10
1.7 TO TAKE OUT CASSETTE TAPE 1-10
1.8 REPLACEMENT OF CCD IMAGE SENSOR 1-11
1.8.1 Removal of CCD image sensor 1-11
1.8.2 Installation of new CCD image sensor 1-11
1.9 HEAT BONDED FLEXIBLE CABLE SERVICE 1-12
1.9.1 Removal 1-12
1.9.2 Installation 1-12
1.9.3 Reinforcing 1-13

2. MECHANISM ADJUSTMENT

2.1 SERVICE CAUTIONS 2-1
2.1.1 Precautions 2-1
2.1.2 How to read the disassembly and assembly (For Mechanism Parts) 2-1
2.1.3 Main screws and washers to deal with disassemby/assembly 2-1
2.2 DISASSEMBLY/ASSEMBLY OF MECHANISM PARTS 2-2
2.3 REPLACEMENT OF UPPER DRUM 2-9
2.3.1 Removal of upper drum 2-9
2.3.2 Installation of new upper drum 2-9
2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE 2-10
2.5 TAPE TRANSPORT ADJUSTMENT 2-12
2.5.1 Required adjustment tools 2-12
2.5.2 Back tension 2-12
2.5.3 Tape pattern 2-12
2.5.4 A/CTL head height & azimuth 2-13
2.5.5 Phase of control head (X value) 2-14
2.6 REMARKS 2-14
2.6.1 Cleaning 2-14
2.6.2 Applying oil and grease 2-14
2.6.3 Checkup 2-14

3. ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT 3-1
3.1.1 PREPARATION 3-1
3.1.2 CCD CIRCUIT 3-3
3.2 COLOR VIEWFINDER SECTION ADJUSTMENT 3-6
3.2.1 REG 13.5 V 3-6
3.2.2 OSC 3-6
3.2.3 Brightness 3-6
3.2.4 Contrast 3-6
3.2.5 White balance-1 3-7
3.2.6 White balance-2 3-7
3.2.7 Color level 3-7
3.2.8 Color phase 3-8

4. CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES 4-1
CIRCUIT BOARD NOTES 4-2
4.1 BOARD INTERCONNECTION (DECK) 4-3
4.2 BOARD INTERCONNECTION (CAMERA) 4-5
4.3 POWER SYSTEM BLOCK DIAGRAM 4-7
4.4 Y/C BLOCK DIAGRAM 4-9
4.5 SYSCON/SERVO BLOCK DIAGRAM 4-11
4.6 CAMERA BLOCK DIAGRAM 4-13
4.7 SYSCON SCHEMATIC DIAGRAM 4-17
4.8 SUB SYSCON SCHEMATIC DIAGRAM 4-19
4.9 SERVO SCHEMATIC DIAGRAM 4-21
4.10 AUDIO SCHEMATIC DIAGRAM 4-23
4.11 MAIN CIRCUIT BOARD 4-25
4.12 FLYING ERASE SCHEMATIC DIAGRAM 4-30
4.13 PRE/REC SCHEMATIC DIAGRAM 4-33
4.14 Y/C SCHEMATIC DIAGRAM 4-35
4.15 PROCESS SCHEMATIC DIAGRAM 4-38
4.16 PROCESS CIRCUIT BOARD 4-42
4.17 REAR AND TRANS SCHEMATIC DIAGRAMS 4-45
4.18 REAR AND TRANS CIRCUIT BOARDS 4-47
4.19 MIC AMP AND JACK SCHEMATIC DIAGRAMS 4-49
4.20 MIC AMP, JACK AND UPPER DRUM CIRCUIT BOARDS 4-51
4.21 CCD SCHEMATIC DIAGRAM 4-53
4.22 CCD CIRCUIT BOARD 4-55
4.23 A/D SCHEMATIC DIAGRAM 4-57
4.24 A/D CIRCUIT BOARD 4-59
4.25 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAMS 4-61
4.26 ELECTRONIC VIEWFINDER CIRCUIT BOARDS 4-63
4.27 OPERATION (CAMERA) SCHEMATIC DIAGRAM 4-65
4.28 OPERATION (DECK) SCHEMATIC DIAGRAM 4-66
4.29 VOLTAGE CHARTS 4-67
4.30 WAVEFORMS 4-74

5. PARTS LIST

5.1 PACKING ASSEMBLY <M1> 5-1
5.2 FINAL ASSEMBLY <M2> 5-3
5.3 MECHANISM ASSEMBLY <M3> 5-6
5.4 ELECTRICAL PARTS LIST 5-8
MAIN BOARD ASSEMBLY <01> 5-8
REAR BOARD ASSEMBLY <02> 5-15
MIC AMP BOARD ASSEMBLY <03> 5-17
JACK BOARD ASSEMBLY <04> 5-18
TRANS BOARD ASSEMBLY <05> 5-18
SENSOR BOARD ASSEMBLY <06> 5-18
OPERATION(CAMERA) BOARD ASSEMBLY <07> 5-18
END SENSOR BRAKET ASSEMBLY <08> 5-18
CCD BOARD ASSEMBLY <11> 5-18
PROCESS BOARD ASSEMBLY <12> 5-19
A/D BOARD ASSEMBLY <13> 5-22
DRUM BOARD <40> 5-22
PBL BOARD ASSEMBLY <51> 5-22
CLD BOARD ASSEMBLY <52> 5-23
BL BOARD ASSEMBLY <53> 5-24

6. TECHNICAL INFORMATION

6.1 EMERGENCY DISPLAY 6-1
6.2 DEMONSTRATION MODE 6-2

7. *MULTI CHARGER ADAPTER* (AA-35U)

7.1 MULTI CHARGER ASSEMBLY <M2> 7-1
7.2 ELECTRICAL PARTS LIST 7-2
7.3 CIRCUIT BOARDS 7-4
7.4 MAIN SCHEMATIC DIAGRAM 7-5

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: **Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.**

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

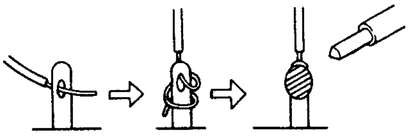


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

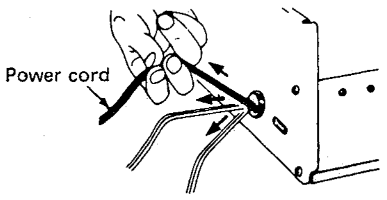


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

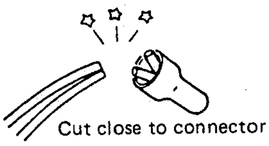


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

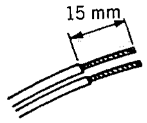


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

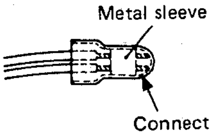


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

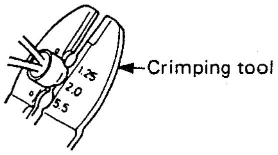


Fig. 6

(5) Check the four points noted in Fig. 7.

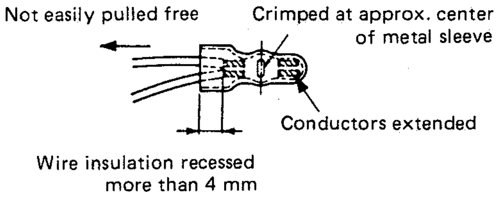

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

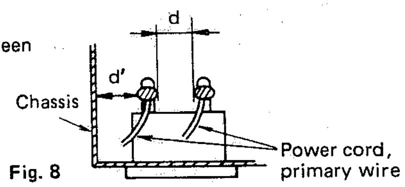


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

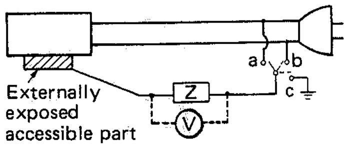


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

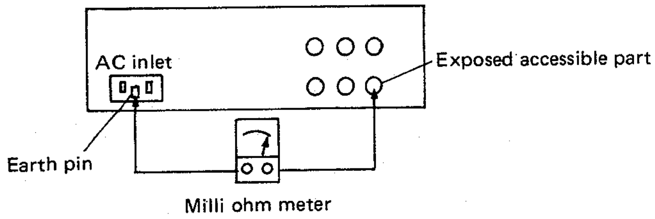


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧1 MΩ/500 V DC	AC 1 kV 1 minute	d, d'≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d'≧ 4 mm
110 to 130 V	USA & Canada	–	AC 1 kV 1 minute	d, d'≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS

Thank you for purchasing the JVC Compact VHS VideoMovie. Learn about all the available features and take advantage of them for your total moviemaking enjoyment. Before using this VideoMovie, read this instruction booklet carefully so that you will obtain the best results from your VideoMovie.

ENGLISH INSTRUCTIONS....................Page 2 – 55

Nous vous remercions pour l'achat du camescope JVC. Pour votre plaisir total, étudiez toutes les caractéristiques disponibles et profitez-en. Avant d'utiliser votre camescope, lire avec soin ce manuel d'instructions pour obtenir les meilleurs résultats possibles de votre nouvel appareil.

INSTRUCTIONS EN FRANÇAIS...........Page 56 – 109

SAFETY PRECAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The AA-V35U Multi AC Charger/Adapter should be used with:
AC 120 V∿, 60 Hz in the USA and Canada,
AC 110 – 240 V∿, 50/60 Hz in other countries.

CAUTION (applies to the AA-V35U)
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

You are recommended to carefully read the cautions on pages 50 and 51 before use.

Warning on lithium battery
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C (212°F) or incinerate.
Replace battery with CR2025; use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

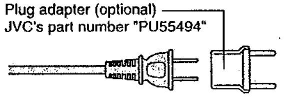
WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

NOTES:
- The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.
- The rating plate (serial number plate) of the Multi AC Charger/Adapter is on its bottom.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

When using the Multi AC Charger/Adapter in areas other than the USA
- The provided Multi AC Charger/Adapter features automatic voltage selection in the AC range from 110 V to 240 V.

USING HOUSEHOLD AC PLUG ADAPTER
In case of connecting the unit's power cord to an AC wall outlet other than American National Standard C73 series type use an AC plug adapter, called a "Siemens Plug", as shown.
For this AC plug adapter, consult your nearest JVC dealer.



Cassettes marked S-VHS-C and VHS-C can be used with this VideoMovie. However, S-VHS recordings are possible only with cassettes marked S-VHS-C.

This VideoMovie is designed to be used with NTSC-type color television signals. It cannot be used for playback with a television of a different standard. However, live recording and viewfinder playback are possible anywhere. Use the BN-V12U/V22U/V50U/V60U battery packs and, to recharge them, the provided multi-voltage Multi AC Charger/Adapter. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

INFORMATION
This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Change or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

ATTENTION:
The product that you have purchased is powered by a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

CONTENTS

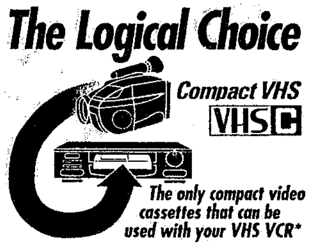
BEFORE USING 2 – 5
Safety precautions....................2
Major features....................4
QUICK OPERATION GUIDE 6 – 7
PREPARATION 8 – 15
Controls and connectors....................8
Preparations....................10
RECORDING 16 – 35
Recording operation....................16
Advanced videography techniques....................21
  Digital image stabilizer....................21
  Eexposure control....................21
  Focusing....................22
  P.AE/EFFECT (special effects)....................23
  FADE/WIPE....................24
Using menu for detailed adjustment....................26
  Menu system....................26
  Selecting zoom magnification....................27
  Wind cut....................27
  Triggar alarm....................27
  Gain up....................27
  Replacing the initially preset effects....................28
  Effects (indication, name & function)....................30
  Fade/wipe modes (indication, name & function)....................31
  Replacing the initially preset fade/wipe modes....................32
  Picture equalization/white balance adjustment....................34
PLAYBACK 36 – 47
Connections to a VCR or a television....................36
Playback....................37
Using the provided remote control unit....................40
  Index code marking....................41
  Self-timer....................41
  Animation....................42
  Time lapse....................43
  Insert editing....................44
  Audio dubbing....................44
  Random Assemble Editing....................45
ACCESSORIES AND INFORMATION 48 – 55
Indications....................48
Helpful terms and information....................49
Cautions....................50
In case of difficulty....................52
Systems flexibility....................54
Specifications....................55

COPYRIGHT© 1994 VICTOR COMPANY OF JAPAN, LTD.

Printed in Japan

MAJOR FEATURES

REMEMBER


The Logical Choice
Compact VHS
VHS C
The only compact video cassettes that can be used with your VHS VCR*

No other compact cassettes can be played back on your VHS VCR*.

JVC COMPACT VHS ADVANTAGES

☞ **Convenience**
Easy playback on your VHS deck* — no hook-ups necessary.

☞ **Conserve**
You don't have to use the VideoMovie for playback — this reduces the wear on the VideoMovie.

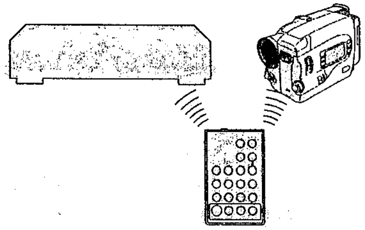
☞ **Comfort**
Can use the VCR's remote control and high speed REW and FF from your easy chair.

☞ **Communication**
Can send your tapes to others who also own a VHS VCR.

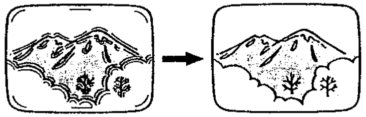
☞ **Choice**
Can also playback recordings through the viewfinder or connect directly to a TV.

*Using Cassette Adapter (VHS Playpak)

Full Function MBR (Multi-Brand Remote)
☞ P. 40 – 47

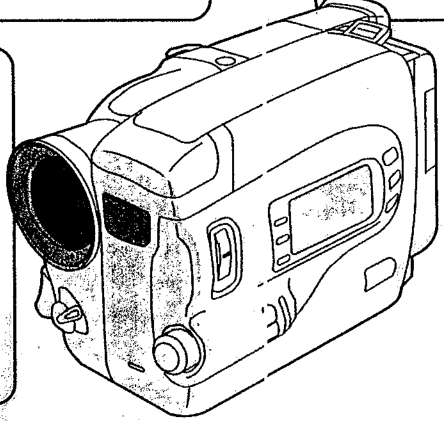


Digital Image Stabilizer
☞ P. 21

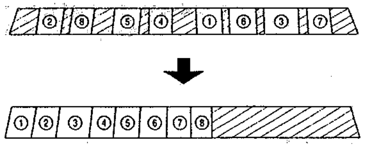


Color Viewfinder

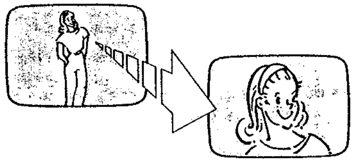
Snapshot and Motor Drive Modes
☞ P. 19



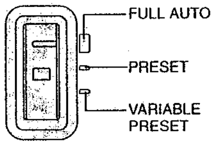
Automatic 8-Segment Random Assemble Editing
☞ P. 45 – 47


② ⑧ ⑤ ④ ① ⑥ ③ ⑦
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

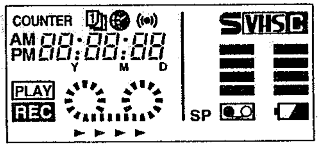
Digital Zooming (20x, 100x)
☞ P. 18



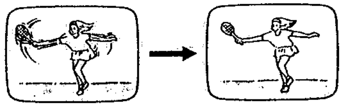
Shooting Modes: 3 Selectable Levels
☞ P. 16


FULL AUTO
PRESET
VARIABLE PRESET

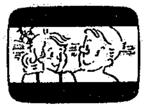
LCD Display Window with Backlighting ☞ P. 12, 13, 49


COUNTER
AM
PM
88:88:88
Y M D
PLAY
REC
SP
S-VHS C

P.AE/EFFECT Modes
☞ P. 23, 28 – 30



Sports

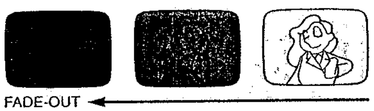


Cinema

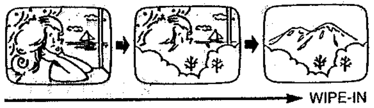
Plus...
- **Classic Film**
- **Sepia ■ Video Echo ■ Twilight**
- **Slow Shutter 1, 2, 3**
- **Strobe 1, 2, 3 ■ Monotone**

FADE/WIPE Modes
☞ P. 25, 31, 32

Example: Black Fader


FADE-IN
FADE-OUT

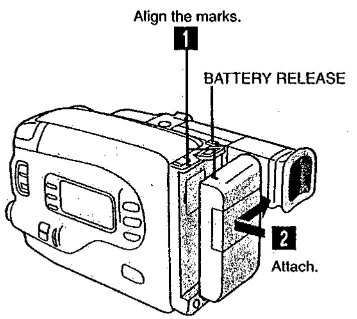
Scroll wipe by Picture



Fader: White, Black, B/W, Mosaic
Black Screen/Picture Wipe: Shutter, Slide, Scroll, Corner, Window, Door
Others: Dissolve, Auto Select

QUICK OPERATION GUIDE

SUPPLY POWER

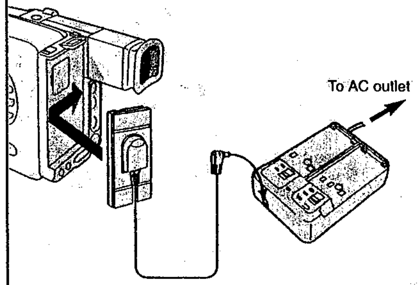

Align the marks.
1
BATTERY RELEASE
2
Attach.

A. Using the battery pack

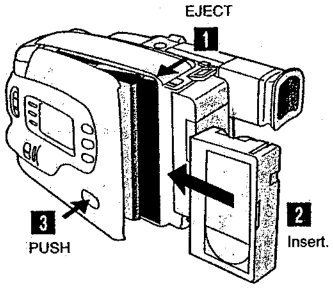
1 Align mark on battery pack with similar mark on back of VideoMovie.(Charging procedure, ☞ P. 11)
2 Slide the battery pack in the direction of the arrow until it locks into place.

To remove the battery pack
Press BATTERY RELEASE and slide out the battery pack.

B. Using the Multi AC Charger/Adapter (☞ P. 10)

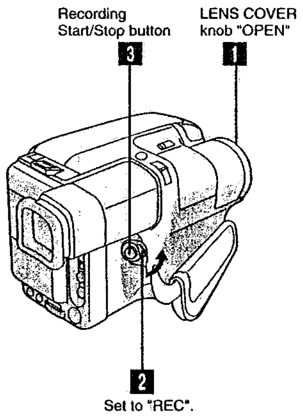

To AC outlet

INSERTING A VIDEO CASSETTE


EJECT
1
3
PUSH
2
Insert.

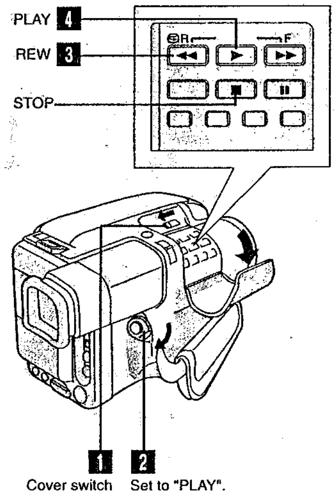
1 Slide EJECT.
2 Insert a video cassette.
3 Press PUSH.
(For more details, ☞ P.14)

SHOOTING


Recording Start/Stop button
3
LENS COVER knob "OPEN"
1
2
Set to "REC".

1 Turn the LENS COVER knob to open the lens cover.
2 Set the power switch to "REC".
— The power indicator will light and image will be seen in the viewfinder.
3 Press the Recording Start/Stop button.
— Recording starts.
- To stop recording temporarily, momentarily press the Recording Start/Stop button once again.
(For more details, ☞ P.17)

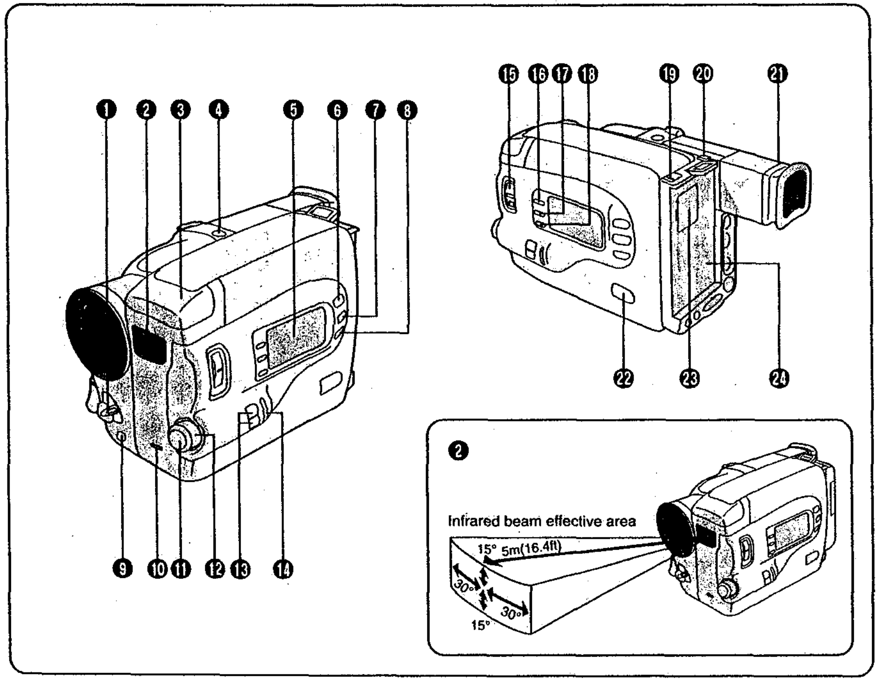
PLAYBACK


PLAY 4
REW 3
STOP
R
F
1
Cover switch
2
Set to "PLAY".

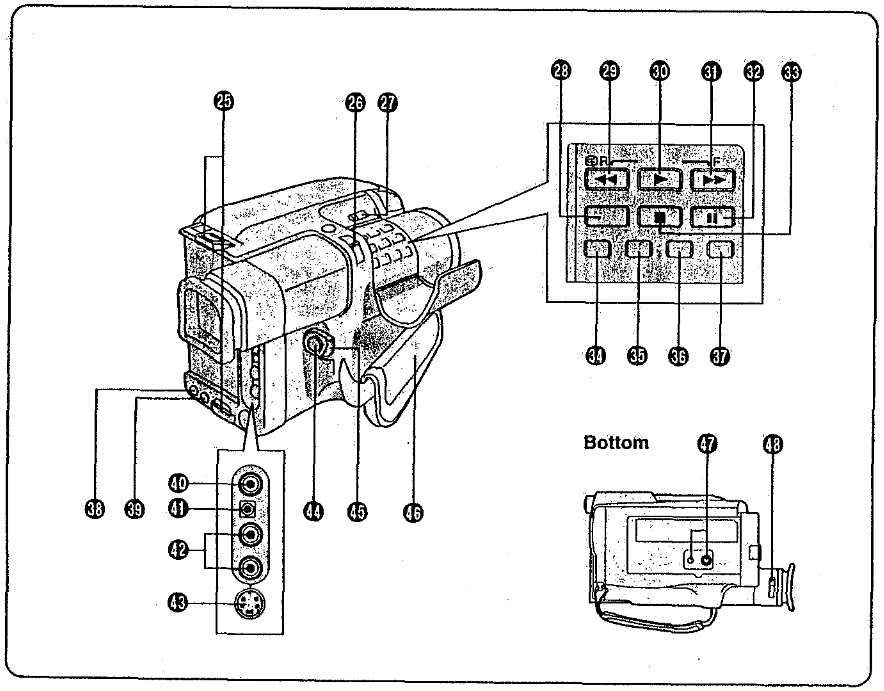
1 Slide the cover switch to open the cover.
2 Set the power switch to "PLAY".
3 Press REW.
— The tape will automatically stop at the beginning of the tape.
4 Press PLAY.
— Playback starts and playback picture appears in the viewfinder.
- To stop playback, press STOP.
(For more details, ☞ P.38)

Or simply play back the tape on a VHS VCR using the Cassette Adapter (VHS Playpak). ☞ P. 37

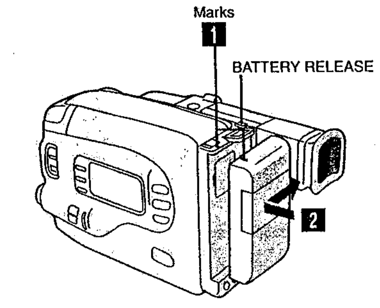
CONTROLS AND CONNECTORS



No.	Page
① LENS COVER knob	*17*
② Infrared beam sensor window Receives the transmitted beam signal from the remote control unit. *The transmitted beam may not be effective or may cause misoperations when the infrared beam sensor window is directly exposed to sunlight or powerful lighting.	
③ Microphone	
④ SNAPSHOT button	*19*
⑤ LCD display window	*12, 13, 49*
⑥ D.I.STABILIZER button	*21*
⑦ P.AE/EFFECT button	*23, 28 - 30*
⑧ FADE/WIPE button	*24, 25, 31, 32*
⑨ External MIC jack (capped)	*17*
⑩ Tally lamp	*17*
⑪ Auto/manual FOCUS button	*22*
⑫ Manual focus dial	*22*
⑬ +/- (Exposure/select) buttons	*21*
⑭ MENU button	*26 - 35, 38*
⑮ Shooting mode selector	*16*
⑯ SET (date/time) button	*12, 13*
⑰ ALARM on/off button	*12, 13*
⑱ DISPLAY select button	*19*
⑲ EJECT switch	*14*
⑳ BATTERY RELEASE	*10*
㉑ Electronic viewfinder	*15, 48*
㉒ PUSH button	*14*
㉓ Clock battery compartment	*12*
㉔ Battery pack mount	*10*
㉕ Eyelets for shoulder strap	*54*
㉖ Power zoom switch	*18*
㉗ Cover switch	
Operation buttons The buttons ㉘ to ㊲ are located beneath the cover.	
㉘ EDIT button	*47*
㉙ REW/RETAKE "R"/ ↩ (Quick Review) button	*20, 38*



No.	Page
㉚ PLAY button	*38*
㉛ FF/RETAKE F button	*20, 38*
㉜ PAUSE button	*20, 39*
㉝ STOP button	*38*
㉞ DISPLAY LIGHT ON/OFF button	*12*
㉟ SP/EP recording mode select button	*15*
㊱ Tape length and format select button	*15*
㊲ COUNTER R/M (Reset/Memory) button	*39, 44*
Connectors The jacks ㊳ to ㊸ are located beneath the jack cover.	
㊳ REMOTE jack For connection of the RM-V20U wired remote control unit (optional).	
㊴ EDIT jack	*47*
㊵ VIDEO out jack	*36, 47*
㊶ RF DC OUT jack For connection of the RF-V5U RF unit (optional).	*36*
㊷ AUDIO out jacks	*36, 47*
㊸ S-OUT connector	*36, 47*
㊹ Recording Start/Stop button	*17*
㊺ POWER switch	
㊻ Grip strap	*15*
㊼ Tripod mounting socket Align the screw and camera direction stud of the tripod TP-V20U (optional) with the camera's tripod mounting socket and stud hole, and firmly tighten the screw.	
㊽ Diopter adjustment	*15*



Recording time

BN-V12U	approx. 40 min.
BN-V22U	approx. 85 min.
BN-V50U	approx. 120 min.
BN-V60U	approx. 85 min.

- The recording time per charge is influenced by the duration of the recording standby, frequency of zooming, etc. It is safer to have spare battery packs.

POWER SUPPLY SYSTEM

The convenient 3-way power supply system gives you a choice of the most appropriate power supply unit, depending on the application.

- No function is available without power supply.
- Do not use any power supply other than specified.
- Never attempt to use these power supply units with any equipment other than the VideoMovie.
- The provided Multi AC Charger/Adapter features automatic voltage selection in the AC range from 110 V to 240 V.

WITH BATTERY PACK

The battery pack has been kept in the uncharged state for shipment. Therefore, before use, be sure to charge it. (☞ See next page.)

Attaching the battery pack

- Before attaching the battery pack, insert the lithium battery.(☞ P. 12)

1 Align mark on battery pack with similar mark on back of VideoMovie.

2 Slide the battery pack into place in the direction of the arrow until it locks in place.

To remove the battery pack:
Slide off the battery pack while pressing BATTERY RELEASE.

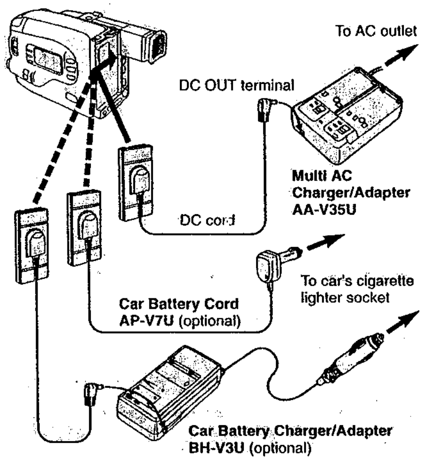
WITH AC POWER

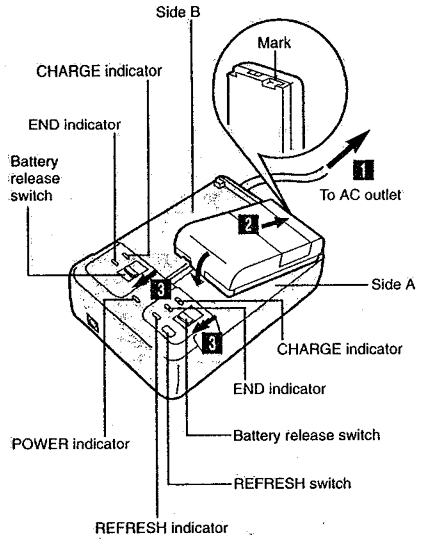
Use the Multi AC Charger/Adapter.

IN A CAR

Use the Car Battery Cord or Car Battery Charger.

- Leave the car's engine idling when using the car battery.
  (For use with 12 V negative-grounded cars only.)
- The battery pack can also be recharged with the BH-V3U. Refer to the instruction booklet of the BH-V3U. (For use with 12 V or 24 V negative grounded cars only.)


To AC outlet
DC OUT terminal
Multi AC Charger/Adapter AA-V35U
DC cord
To car's cigarette lighter socket
Car Battery Cord AP-V7U (optional)
Car Battery Charger/Adapter BH-V3U (optional)



	Charging time	Discharging time
BN-V12U	approx. 50 min.	approx. 210 min
BN-V22U	approx. 100 min.	approx. 420 min
BN-V50U	approx. 120 min.	approx. 540 min
BN-V60U	approx. 100 min.	approx. 420 min

- The diagrams above indicate the approximate charging and discharging times of battery packs that are fully charged.
- Charging time and discharging time will vary depending on the ambient temperature and the status of the battery pack.

Notes:

- The REFRESH function is only available on side A.
- Only the A side can be used to charge/discharge nickel-metal hydride battery packs (i.e., BN-V50U).
- The AA-V35U cannot discharge and charge battery packs simultaneously.
- Do not repeatedly recharge a battery pack without fully discharging it. Its service life will decrease. Use the REFRESH feature after every 5 charges.
- Read the notes about battery packs carefully (☞ P. 51).

CHARGING/DISCHARGING THE BATTERY PACK

Charging the battery pack

1 Connect the AC power cord to a wall outlet.
— The POWER indicator lights.

2 Align marks and push in the battery pack until it locks in place.
— The CHARGE indicator blinks.
— When charging has been completed, the CHARGE indicator will go off and the END indicator will light.

3 Slide the battery release switch in the direction of the arrow to remove the battery pack.

Charging two battery packs consecutively

1 Attach two battery packs; one to side A and one to side B.

2 Charging starts from the side (A or B) on which a battery pack was attached first.
— The CHARGE indicator blinks on the side where charging is in process. The other CHARGE indicator lights steadily while on stand-by.

3 Charging on one side is completed.
— On that side, the CHARGE indicator will go off and the END indicator will light.
Then charging begins on the other side.
— The CHARGE indicator that has remained lit starts blinking.

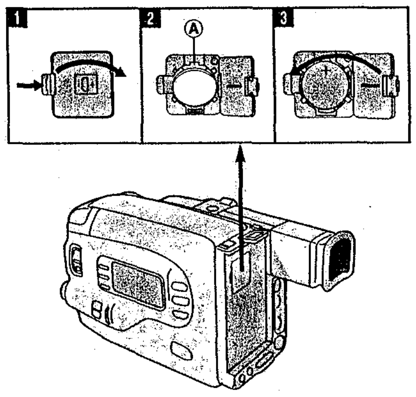
4 When charging is over on both sides A and B, the two END indicators will light.

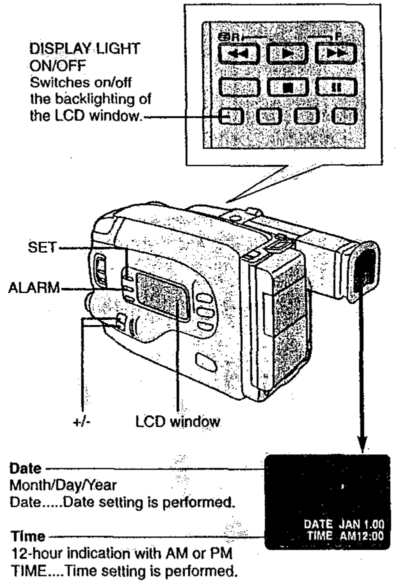
Using the REFRESH feature

The REFRESH feature on the Multi AC Charger/Adapter AA-V35U allows you to completely discharge the power from the battery pack before charging. After charging the battery pack several times, the actual battery operating time will gradually decrease. For this reason it is recommended to use the REFRESH feature only after every 5 charges.

1 Align marks and push in the battery pack until it locks in place.

2 Push REFRESH.
— The REFRESH indicator will light, and discharging will begin.
— When discharging is completed, the REFRESH indicator will go off. Then charging will begin and the CHARGE indicator will start to blink.
— If two battery packs are attached, the one on side A will always be discharged first; then the battery on side B is charged before the one on side A.




DISPLAY LIGHT ON/OFF
Switches on/off the backlighting of the LCD window.
SET
ALARM
+/-
LCD window
Date
Month/Day/Year
Date.....Date setting is performed.
Time
12-hour indication with AM or PM
TIME....Time setting is performed.
DATE JAN 1.00
TIME AM12:00

- When the power switch is set to "REC", the time is also displayed in the viewfinder.

CLOCK (LITHIUM) BATTERY INSERTION

Necessary for clock operation, date/time settings and digital memory functions.

* Remove the power supply unit before inserting or removing the clock battery.

1 Open the clock battery compartment cover while pressing the release tab.

2 Insert the provided lithium battery with the plus (+) side up and push it in.

* When removing the battery, insert a pointed non-metallic object between the battery and the compartment (Ⓐ) to pull it out.

3 Close the compartment cover until it clicks in place.

Warning on lithium battery
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of it in fire.

(See Warning on lithium battery, ☞ P. 2)

SETTING DATE/TIME

Before adjusting the date and time for the first time or after replacing the clock battery.

(Make sure that the power switch is set to "REC" or "OFF".)

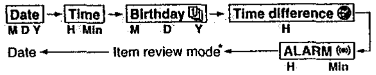
1 Keep SET pressed until the unit beeps.

— The setting mode is engaged.

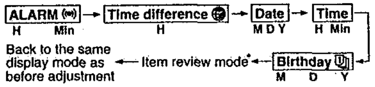
- Press SET to select the item to set.

The item changes in the sequence below, displayed in the LCD window:

- **If date/time is to be set after inserting or replacing the lithium battery:**


Date
M D Y
Time
H Min
Birthday
M D Y
Time difference
H
ALARM
H Min
Date
Item review mode*

- **If date/time has been already set:**


ALARM
H Min
Time difference
H
Date
M D Y
Time
H Min
Birthday
M D Y
Item review mode*
Back to the same display mode as before adjustment

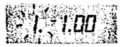
*Shows items in memory one after another in approx. 3 seconds.

Date/time

(Example: setting date/time only)

2 Press SET until the date display appears.

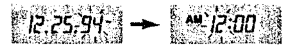
— Month blinks.



3 Press +/- to choose the correct number for month.

4 Repeat steps 2 and 3 to set the day, year, hour and minute.

- "AM 12:00" stands for midnight, and "PM 12:00" for noon.


12.25.94
AM 12:00

5 Press SET until the unit beeps.

— The LCD window enters the item review mode, and then returns to the same display mode as before setting.

- If the setting has been done after inserting or replacing the lithium battery, the date is displayed.

Birthday (Age)

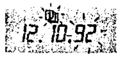
(Example: setting to Dec.10, 1992)

2 Press SET until 🎂 appears.

— Month blinks.

3 Press +/- to choose the correct number for month.

4 Repeat steps 2 and 3 to set the day and year.



5 Press SET until the unit beeps.

— The LCD window enters the item review mode, and then returns to the same display mode as before setting.

Alarm

The unit can be set to go off like an alarm clock at any time required for approx. 1 minute.

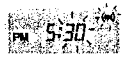
(Example: setting to 5:30 p.m.)

2 Press SET until (•) appears.

— Hour blinks.

3 Press +/- to choose the required number for hour.

4 Repeat steps 2 and 3 to set the minute.



5 Press SET.

— The unit beeps. The LCD window returns to the same mode as before setting, and (•) disappears.

- If the setting has been done after inserting or replacing the lithium battery, the date is displayed.

6 Press ALARM.

— The (•) reappears. The unit's alarm will go off at the time you have set.

- To stop the alarm, press ALARM.
- To cancel the alarm in advance, press ALARM.
  — (•) disappears.
- The alarm does not sound when battery pack power is low.

Time difference

Convenient when taking the VideoMovie on trips.

(Example: Traveling from N.Y. to the West Coast)

2 Press SET until ⊕ appears.

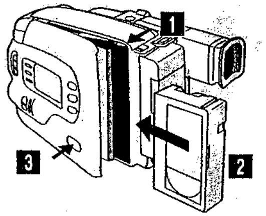
3 Press +/- to choose the correct number for the time difference (Hours, -23 to +23).

4 Press SET.

— The unit beeps. After the item review mode, the LCD window returns to the same mode as before setting.

— The displayed time is earlier/later by the amount of difference (hours) in memory.

PREPARATIONS (Cont'd)



LOADING AND UNLOADING A CASSETTE

Loading

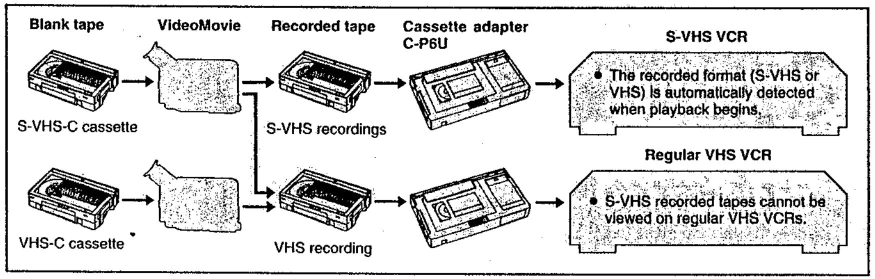
1. Slide EJECT. — The cassette holder opens.
2. Insert the cassette with its label facing outward.
3. Press PUSH to close and lock the cassette holder.

Unloading

1. Slide EJECT. — The cassette holder opens.
2. Remove the cassette.
3. Press PUSH to close and lock the cassette holder.

COMPATIBILITY BETWEEN S-VHS AND VHS

Recording **Playback**

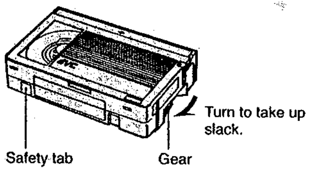

Blank tape
VideoMovie
Recorded tape
Cassette adapter C-P6U
S-VHS VCR
S-VHS-C cassette
S-VHS recordings
Regular VHS VCR
VHS-C cassette
VHS recording

- The recorded format (S-VHS or VHS) is automatically detected when playback begins.
- S-VHS recorded tapes cannot be viewed on regular VHS VCRs.

Playback

The pictures recorded with the VideoMovie can be played back by directly connecting it to a TV; and can also be played back using a VCR.

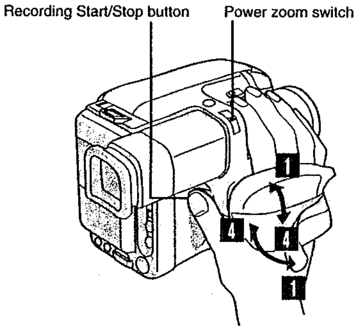
VIDEO CASSETTE


Turn to take up slack.
Safety tab
Gear

Storage of cassettes

- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

- This VideoMovie employs only the cassettes carrying the S-VHS-C/VHS-C mark.
- Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
- An inverted cassette cannot be inserted.
- Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.
- Make certain before loading the cassette that the tape is not slack. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up slack.
- The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to reseal the slot.
- To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.


Recording Start/Stop button
Power zoom switch
1
4
4
1

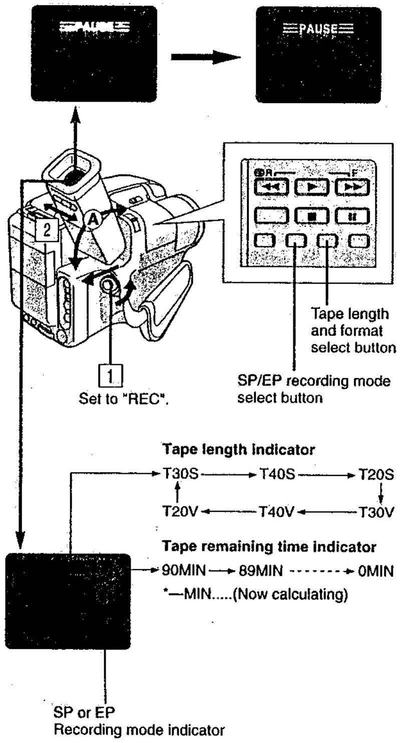
ADJUSTING THE GRIP

1. Separate the Velcro strip to expand the loop.
2. Pass your right hand through the loop and grasp the grip.
3. Adjust the length of the strap so that your thumb and fingers can easily manipulate the Recording Start/Stop button and power zoom switch.
4. Refasten the Velcro strip.

VIEWFINDER ADJUSTMENT

- **Positioning**
  Pull the viewfinder, then position it for optimum viewability (Ⓐ).
- **Diopter adjustment**
  The viewfinder lens can be adjsuted to suit the operator's eyesight.

1. Set the power switch to "REC".
2. Turn the diopter adjustment control until the indications in the viewfinder are clearly focused.


PAUSE
2
A
1
Set to "REC".
Tape length and format select button
SP/EP recording mode select button
Tape length indicator
T30S → T40S → T20S
T20V ← T40V ← T30V
Tape remaining time indicator
90MIN → 89MIN -------→ 0MIN
*—MIN.....(Now calculating)
SP or EP
Recording mode indicator

SELECT THE RECORDING MODE

Set the recording mode as required.

- **SP:** To maintain sound and picture quality. Better for dubbing later.
- **EP:** To record 3 times longer than when in the SP mode. For more economical use of tape.

Note:
If the recording mode is switched during actual recording on the same tape, the playback picture will be blurred at the point of switching.

SET THE TAPE LENGTH AND THE FORMAT

The tape remaining time is displayed in the viewfinder as shown. Before shooting, press the tape length select button according to the tape and the recording format to be used.

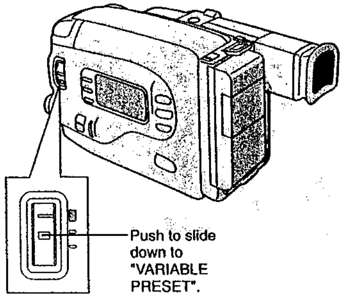
- **TC-20:** When using a tape with 20-minute recording time or less.
- **TC-30:** When using a tape with recording time of more than 20 minutes (SP).
- **TC-40:** Ready for future availability of 40-minute cassettes.
- **S or V:** When using a S-VHS-C cassette, choose either of the recording formats.
  S: Super VHS V: Normal VHS

Notes:
- The indicated remaining time is approximate.
- The time required to calculate the remaining tape length and accuracy of the calculation may vary according to the type of tape used.
- "TAPE END" appears when the tape reaches its end. "TAPE END" also appears when a cassette is loaded whose tape is already at its end.

RECORDING

SHOOTING MODE SELECTOR

Switchable to one of three modes according to the user's shooting level.

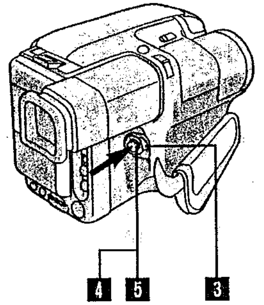


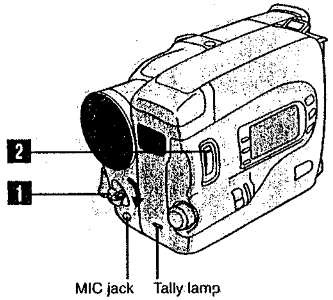
- For beginners: **FULL AUTO**
- For those getting accustomed to the VideoMovie: **PRESET**
- For those who understand the VideoMovie very well: **VARIABLE PRESET**
  — Push to slide down the switch to this position.

The position of the shooting mode selector varies the VideoMovie's recording functions (It doesn't affect other functions).

Function	Position			Page
	FULL AUTO	PRESET	VARIABLE PRESET	
D.I.Stabilizer	Auto.	ON/OFF	ON/OFF	☞ P. 21
Exposure control	Not effective	Activated	Activated	☞ P. 21
Auto focus	Auto.	ON/OFF	ON/OFF	☞ P. 22
Digital zoom	Auto.	ON/OFF	ON/OFF	☞ P. 18, 26
P.AE/EFFECT	Not effective	Activated	Activated*	☞ P. 23, 26, 28 – 30
FADE/WIPE	Not effective	Activated	Activated*	☞ P. 24,25,26,31,32

* The menu display can be used to replace the 5 initially preset modes with other programmed modes.





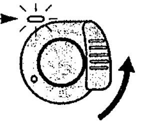
Notes:
- For a longer pause, set the power switch to "OFF" to save power.
- When a tape reaches its end during recording, "TAPE END" indicator will appear in the viewfinder and power itself off automatically if left for longer than 5 minutes.
- If the Record-Standby mode continues for longer than about 5 minutes, the unit switches itself off automatically. To restart recording, turn the power on and press the Recording Start/Stop button. This makes clean assembled recordings possible even after a long pause.
- When turning off the VideoMovie with the power switch set to "REC", be sure to set the switch to "OFF" first. Then set it back to "REC" to turn on the VideoMovie again.
- When an external microphone is connected:
  - The LCD window's backlighting automatically turns off. The display light button becomes ineffective.
  - The minimal focal length is extended to approx. 15cm.
  - The wind cut function (☞ P. 27) is automatically switched off.
  - The built-in microphone becomes ineffective.

SHOOTING

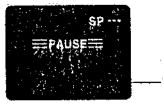
Preparations
- Supply power.(☞ P. 10.)
- Insert a video cassette correctly. (☞ P. 14.)
- Adjust the grip strap. (☞ P. 15.)
- Set SP/EP as required. (☞ P. 15.)

1. To enter the Record-Standby mode

1 Turn the LENS COVER knob to open the lens cover.
2 Set the shooting mode selector to "FULL AUTO".
3 Set the power switch to "REC".

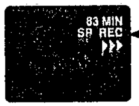


— The VideoMovie enters the Record-Standby mode.
The aimed-at scene will appear on the viewfinder screen.



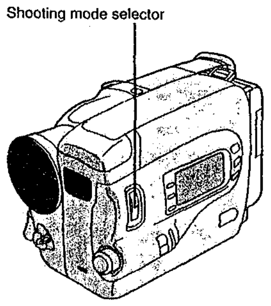
2. To shoot the scene

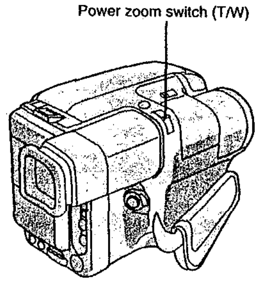
4 Press the Recording Start/Stop button to start recording.
— The tally lamp lights while the recording is in progress.

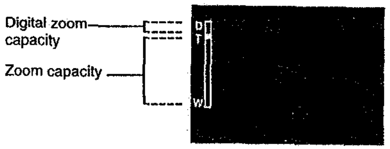


5 To stop recording temporarily.
Press the Recording Start/Stop button once again.
- To restart recording.
  Press the Recording Start/Stop button.
- Repeating steps **4** and **5** produces assemble recordings.
- An external microphone can also be used to record sound. Connect it to the MIC jack.

RECORDING OPERATION (Cont'd)







ZOOMING

Pressing the power zoom switch ("T" and "W") will vary the focal length of the lens. Maximum magnification is approximately 10x.

Procedure:

- Press T : Zooms in on the image, brings it "nearer".
- Press W : Zooms out, "backs away" from the image.
- Two zooming speeds are available. For slow-speed, push lightly. For regular-speed, push firmly.

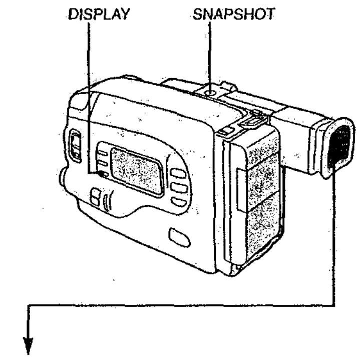
DIGITAL ZOOM

With the shooting mode selector set to "FULL AUTO", digital zoom offers double the magnification of normal zoom. (Maximum approx. 20x)

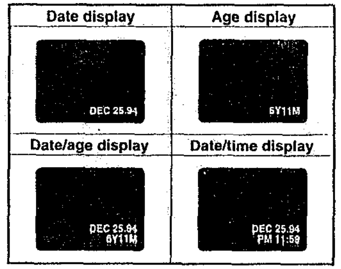
- To change the maximum magnification from 20x, use the menu display to select 10x or 100x. (☞ P. 16, 26)
- 20x and 100x magnification processes the image electronically, causing a reduction in picture quality.

Notes:

- Focusing may become unstable during the zooming-in operation. In this case, first zoom in in the Recording Standby mode then, after using the manual focusing (☞ P. 22) to hold the focus fixed, zoom in or out in the Record mode.
- When shooting low-contrast subjects in the Zoom-in mode, the Videomovie automatically zooms out with the low contrast indicator blinking and focus being performed.
- When using shifted zoom at maximum zoom-in position under conditions of very low light, the outside edge of the picture may appear slightly out of focus. This is a normal condition caused by inherent lens aberrations.



Date display ——→ Age* display ——→ Date/age* display
↑ ↓
Date-off mode ←— On-screen display ←— Date/time display



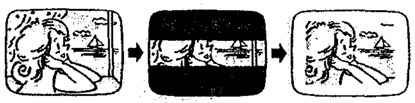

"Shutter" effect

Photo-like still

DATE/TIME/AGE INSERT

Select the display mode

The date/time/age can be displayed and recorded according to the selected mode.

Press DISPLAY while in the Record-Pause mode to cycle through the modes in the order shown on the left.

*Age is displayed if a birthday has been set in memory. (☞ P. 12, 13)

Recording the display

The selected display mode can be recorded.

- When no display is needed on the recorded tape, select Date-off mode before shooting.

On-Screen Display Mode

The viewfinder indications can also be displayed on the screen of a monitor connected to the VideoMovie.

- Connect the VideoMovie to a video monitor. Press DISPLAY until the viewfinder indications (☞ P. 48) appear on the monitor screen.
- In the On-Screen Display mode, the date and age will be displayed and recorded.
- The on-screen display is not available during recording.

SNAPSHOT MODE

This interesting feature lets you record a white-bordered digital still that looks (and sounds) just like a photograph is being taken. Use it to liven up recordings of parties, weddings, graduations, and so on.

To engage the Snapshot mode:

Press SNAPSHOT.

- When engaged during recording, there will be a momentary camera shutter-type blackout, a shutter sound effect is recorded on the tape, and a white-bordered still image is displayed and recorded for approx. 3 seconds. This still image automatically fades out, and the unit resumes normal recording.
- "PHOTO" appears in the viewfinder.
- If engaged during pause, a still image is recorded for 3 seconds. After that, the unit enters the Record Pause mode.

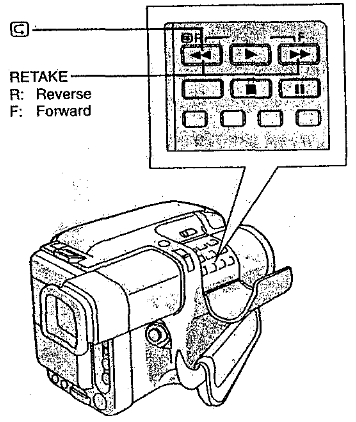
Motor Drive mode:

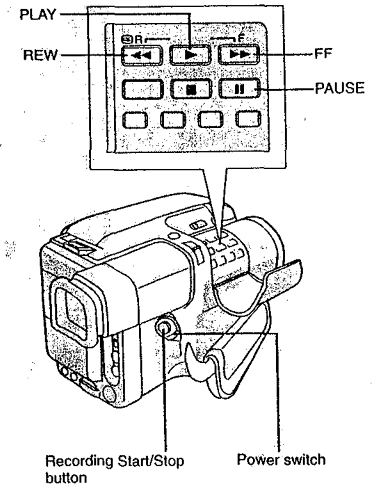
Keeping SNAPSHOT pressed provides the effect similar to serial photography. (The interval between the still pictures: approx. 3 seconds)

Note:

Date/time/age display will disappear during Snapshot mode.

RECORDING OPERATION (Cont'd)





QUICK REVIEW

If you want to review the end of the last recording for confirmation, use this function.

- Press Ⓒ from the Record-Standby mode.
  — The tape will be rewound for about 2 seconds of program time and played back automatically for this section, after which it will pause in the Record-Standby mode for the next shot.

Note:
Distortion might occur when playback starts. This is normal.

RETAKE

While recording, you may decide to re-record certain segments. The Retake function is convenient for this.

1. Make sure the VideoMovie is in the Record-Standby mode. (If not, engage the mode.)
2. Press either RETAKE to reach the point where you wish a new recording to start.
   - When RETAKE is released, the camera will enter the Record-Standby mode again.
3. Press the Recording Start/Stop button.
   — Recording starts.

Note:
Noise may appear during Retake. This is normal.

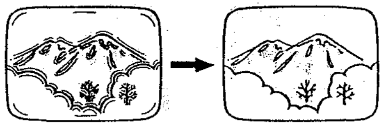
ASSEMBLE RECORDING TECHNIQUES

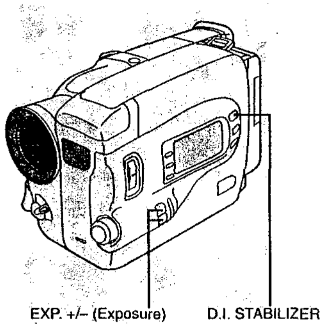
To replace the battery pack during recording

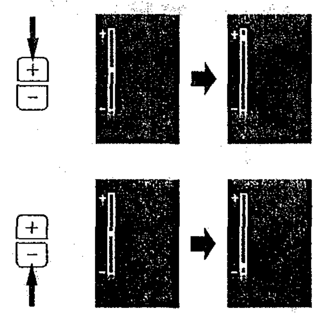
1. If the low-battery warning (▭) blinks in the viewfinder while recording, stop recording and set the power switch to "OFF" to turn power off.
2. Replace the battery pack with a charged one.
3. Set the power switch to "REC".
   — The unit will be in the Record-Standby mode.
4. Press the Recording Start/Stop button.
   — Recording starts.

To record onto a partially recorded tape

1. Set the power switch to "PLAY" and press PLAY to playback the tape to a point where you wish a new recording to start.
   - Use REW or FF for faster location.
2. Press PAUSE at the located point.
   — The unit will enter the Still mode.
3. Set the power switch to "REC".
4. Press the Recording Start/Stop button.
   — Recording starts.







DIGITAL IMAGE STABILIZER

To compensate for the unstable images caused by camera-shake (especially noticeable at high zoom ranges), this VideoMovie incorporates a Digital Image Stabilizer.

To switch on/off the Digital Image Stabilizer:
After making sure that the shooting mode selector is set to "PRESET" or "VARIABLE PRESET", press D.I.STABILIZER.

- While the Digital Image Stabilizer is engaged, Ⓓ appears in the viewfinder.

Notes:

- Accurate stabilization may not be possible if hand shake is excessive, or when shooting the following: • Subjects with vertical or horizontal stripes • Low contrast subjects • Dark/dim subjects • Subjects with excessive backlighting • Scenes with movement in various directions • Low contrast backgrounds
- Digital Image Stabilizer (DIS) cannot be used while Strobe, Classic Film or Slow Shutter are activated. When any of these turned on while DIS is already on, the Ⓓ indicator blinks, telling you that DIS is unable to function.
- When shooting with the GR-SZ7 on a tripod, be sure to switch off the Digital Image Stabilizer.

EXPOSURE CONTROL

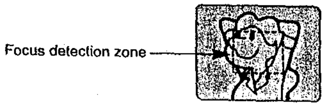
This VideoMovie offers automatic adjustment of iris to provide the best available picture quality, but this can be overidden in cases when manual control of iris is desireable.

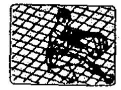
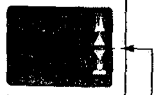
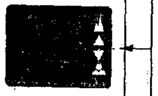
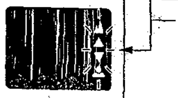
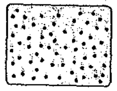
For exposure control:
Press the + or – button.

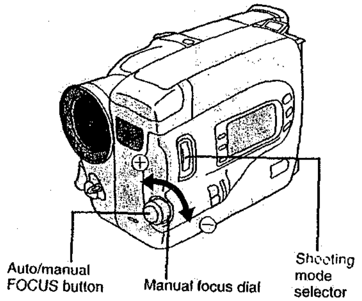
- A brightness indicator bar will appear in the viewfinder.

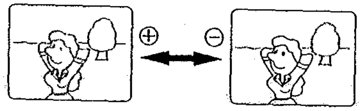
To re-activate automatic control:
Press the + and – buttons simultaneously.

ADVANCED VIDEOGRAPHY TECHNIQUES



	Two subjects at different distances overlap in the same scene.
	Low illumination.
	The subject has no contrast (differences in brightness and darkness), such as a flat, one-color wall, or a clear, blue sky, for instance.
	—Low-contrast warning. A dark object is barely visible in the viewfinder.
	Minute patterns or identical patterns that are regularly repeated.





FOCUSING

Auto-focus

The VideoMovie's Full Range AF system can offer continuous shooting ability from close-up to infinity. The rectangular focus area detects focus. (No actual indication provided in the viewfinder.)

Notes:

- If the lens is smeared with stains or blurred with condensation, accurate focusing is not possible. Keep them clean. If they become dirty, wipe with a piece of soft cloth. When condensation occurs, dry them by wiping with a soft cloth or wait for conditions in which they become dry.
- Correct focus may not be obtained in these situations on the left. In such case manual focusing should be performed to obtain proper focus.

Manual focus

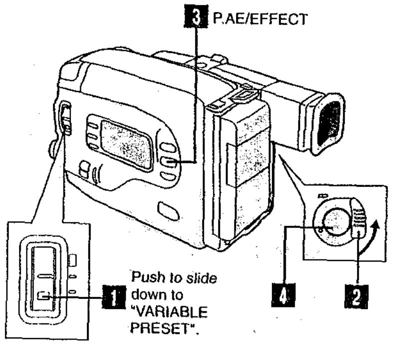
For manual focus operation:

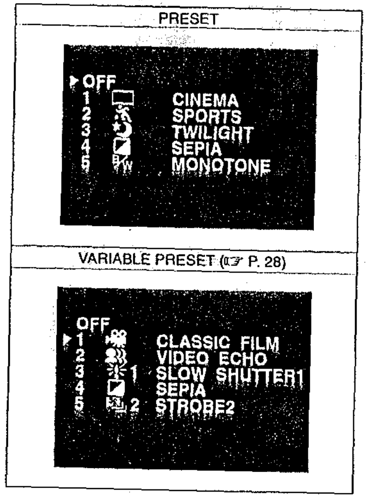
1 Press FOCUS to release the Auto Focus mode.
 — The Manual Focus indicators (▲▲) appear.
2 Zoom in on a subject by sliding the zoom switch to "T".
3 Focus onto it by turning the manual focus dial.
 - Turn the dial in the direction of ⊕.
   The ▲ indicator blinks. It will disappear when the dial is released.
 - Turn the dial in the direction of ⊖.
   The ▼ indicator blinks. It will disappear when the dial is released.
 - When the focus level cannot be adjusted any farther or closer, the indicator (▲) or the indicator (▲) will blink.
4 Determine the composition by pressing "W".

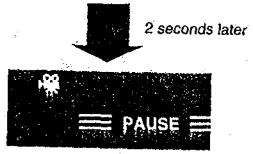
To release the Manual Focus mode (to engage the Auto Focus mode):
Press FOCUS, or set the shooting mode selector to FULL AUTO.
— Manual focus indicators (▲▲) disappear.

Notes:

- When you use the Manual Focus mode, be sure to focus the lens in the maximum *telephoto* position. If you focus in on a certain subject in the wide-angle position, sharply-focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.
- When focusing manually, make neccessary viewfinder adjustments (☞ P. 15), then focus in.







- The selected effect is activated, and its indication appears in the viewfinder.

P.AE/EFFECT (SPECIAL EFFECTS)

Useful to make the picture look creative and attractive. PRESET and VARIABLE PRESET recording modes store 5 kinds of effects each, permitting the user to select one of them.

1 Set the shooting mode selector to PRESET or VARIABLE PRESET.
2 Set the *power switch to REC.*
3 Push P.AE/EFFECT.
 — The effect menu appears in the viewfinder. Press P.AE/EFFECT to move ▶ to the required effect.
 — The selected effect is activated approx. 2 seconds later, and its indication appears in the viewfinder.
4 Press the recording start/stop button.
 — Recording starts.

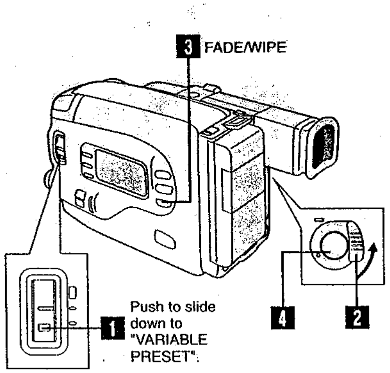
- **To cancel the effect:**
  Move ▶ to OFF in the menu.

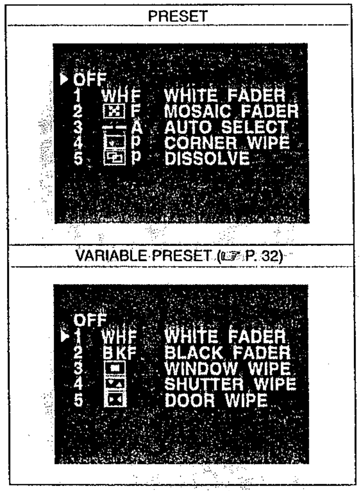
Notes:

- The above procedure is available during shooting.
- Some effects can be used along with the fade/wipe modes.(☞ P. 24) *When a combination is not* possible, the indicators blink in the viewfinder.

(If the shooting mode is set to VARIABLE PRESET, ☞ P. 28)

ADVANCED VIDEOGRAPHY TECHNIQUES(Cont'd)



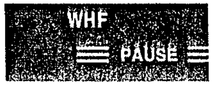

PRESET

▶OFF
1 WHF WHITE FADER
2 ▣F MOSAIC FADER
3 --A AUTO SELECT
4 ◫P CORNER WIPE
5 ◫P DISSOLVE

VARIABLE PRESET (☞ P. 32)

OFF
▶1 WHF WHITE FADER
2 BKF BLACK FADER
3 ■ WINDOW WIPE
4 ▼ SHUTTER WIPE
5 ▶◀ DOOR WIPE

2 seconds later



- The selected fade/wipe mode is reserved, and its indicator appears in the viewfinder.

FADE/WIPE

For pro-style scene transitions.
"PRESET" and "VARIABLE PRESET" recording modes store 5 kinds of fades/wipes each, permitting the user to select one of them.

1 Set the shooting mode selector to PRESET or VARIABLE PRESET.
2 Set the power switch to REC.
3 Press FADE/WIPE.
- The fade/wipe menu appears in the viewfinder. Press FADE/WIPE to move ▶ to the required mode.
- The selected fade/wipe mode is reserved approx. 2 seconds later, and its indicator appears in the viewfinder.
- The Picture Wipe indication (Modes with "P") blinks. Following step 5 in Section C, "Picture Wipe", (☞ P. 25) to store a scene in memory, the symbol indication lights up.

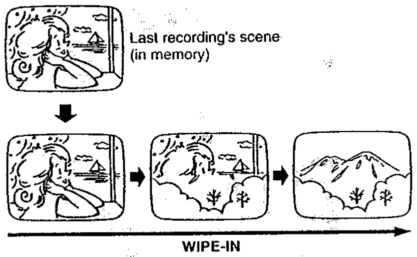
A: Wipe or Fade

In the "PRESET" mode for Wipe or Fade, WHF and ▣F are available; in the "VARIABLE PRESET" mode, WHF, BKF, ■, ▼ and ▶◀ can be used. Further, in menu mode (see ☞ P. 32 — 33), these effects can be replaced with ▶, ▼ or ◣. Use these effects for smooth image and sound fade-ins and fade-outs.

4 Press the recording start/stop button.
— Recording starts, and the image fades/wipes in from a white/black screen.
— As the recording start/stop button is pressed again, the image fades/wipes out to the white/black screen before the VideoMovie enters the Record Pause mode.

Notes:
- To record the fade/wipe process longer, keep the recording start/stop button pressed as required.
- Some fade/wipe modes can be used along with the effects. (☞ P. 23) When a combination is not possible, the indicators blink in the viewfinder.

▣F MOSAIC FADER ← BKF BLACK FADER
↓ ↑
■ WINDOW WIPE ▼ SHUTTER WIPE
↓ ↑
▶◀ DOOR WIPE ▶ SLIDE WIPE
↓ ↑
◣ CORNER WIPE → ▼ SCROLL WIPE


Last recording's scene (in memory)
WIPE-IN

B. --A Auto Select

8 fade/wipe modes are automatically generated whenever recording starts/stops, in the order shown on the left.

4 Just press the recording start/stop button.

C. Picture Wipe (Modes with "P")

In the "PRESET" mode for Picture Wipe, ◫P and ◫P are available; in the "VARIABLE PRESET" mode, if the effects are replaced in the menu mode (☞ P. 32 — 33), ◫P, ◫P, ◫P, ◫P and ◫P are available. The VideoMovie's internal picture memory circuit can use these effects to create scene transitions like those seen in TV dramas.

4 Press the recording start/stop button.
— Recording starts.
5 Press the recording start/stop button again.
— Recording stops, and the Record Pause mode is engaged.
— Now the last scene is stored in memory.

Within 5 minutes...

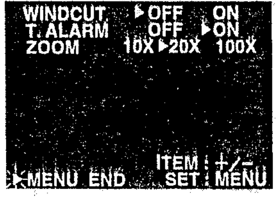
6 Press the recording start/stop button to resume recording.
— The stored scene is gradually replaced (wiped) by the new scene being shot.
- **To cancel the Fade/Wipe mode:**
Move ▶ to OFF in the menu.

Notes:
- Turning off the VideoMovie will erase the scene stored in memory. When a scene is erased from memory, the symbol indication blinks.
- The sound is not recorded while the picture fade/wipe is in process.
- The picture fade/wipe mode indicator blinks unless an image is stored in memory. In this case, shoot a scene first.

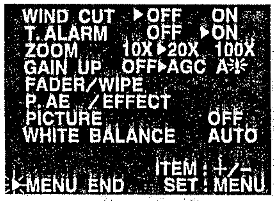
(If the shooting mode is set to VARIABLE PRESET, ☞ P 32.)

USING MENU FOR DETAILED ADJUSTMENT

Power switch:REC   Shooting mode selector:PRESET

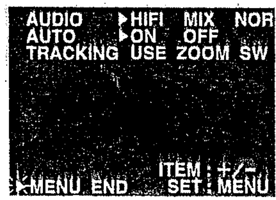

WINDCUT ▶OFF ON
T.ALARM OFF ▶ON
ZOOM 10X▶20X 100X
ITEM : +/–
⁑MENU END SET : MENU

Power switch:REC   Shooting mode selector:VARIABLE PRESET


WIND CUT ▶OFF ON
T.ALARM OFF ▶ON
ZOOM 10X▶20X 100X
GAIN UP OFF▶AGC A⁑
FADER/WIPE
P.AE /EFFECT
PICTURE OFF
WHITE BALANCE AUTO
ITEM : +/–
⁑MENU END SET : MENU

Note:
These are the menus at shipment. When the shooting mode selector is set to FULL AUTO and the power switch to REC, no menu is displayed.

Power switch:PLAY   Shooting mode selector: Any position


AUDIO ▶HIFI MIX NOR
AUTO ▶ON OFF
TRACKING USE ZOOM SW
ITEM : +/–
⁑MENU END SET : MENU

MENU SYSTEM

Many recording and playback settings are chosen using the convenient in-viewfinder menu display.

WIND CUT: A wind filter for the microphone. (☞ P. 27)
T(rigger) ALARM: Helps prevent recording errors (☞ P. 27)
ZOOM: ▶x10: Optical zoom lens magnification.
▶x20: Digital magnification; automatically selected when in FULL AUTO mode.
▶x100: Digital magnification for extended zooming power.

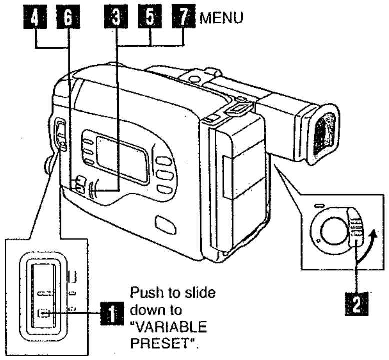
- WIND CUT, T.ALARM and ZOOM can be adjusted as above.

GAIN UP: Controls the sensitivity to conform to the lighting condition.
▶OFF: Normal shooting.
▶AGC: Automatically increases gain sensitivity when illumination falls below a certain level.
▶A⁑ (Auto Slow Shutter): Combines AGC with electronic shutter speed (1/30 to 1/200) for shooting under much darker conditions.

- When shooting in areas where lighting is insufficient, or when shooting a dark-colored object in a dimly lit environment, the unit will automatically enter the Auto Slow Shutter mode, reducing the shutter speed to 1/30 sec. Although the resulting picture will be similar to that obtained in the STROBE effect, the image will be clear with less noise.
- Whenever the shooting mode selector is set to FULL AUTO or PRESET, the Auto Slow Shutter mode is engaged, displaying "A⁑" in the viewfinder. If not required, set the shooting mode selector to VARIABLE PRESET and choose OFF or AGC in the menu.

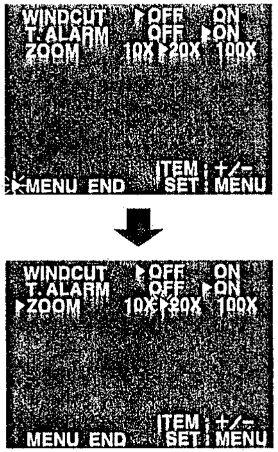
FADER/WIPE: 5 modes can be selected from 18 programmed modes. (☞ P. 31 – 33)
P.AE/EFFECT: 5 effects can be selected from 13 programmed effects. (☞ P. 28 – 30)
PICTURE: Picture equalization (tint/color/softness of image)(☞ P. 34)
WHITE BALANCE: Provides manual adjustment as well as three preset modes. (☞ P. 35)

AUDIO: Selects the audio output.
HIFI: Outputs Hi-Fi stereo sound; normally keep set to here.
MIX: Outputs both Hi-Fi stereo sound and audio-dubbed sound.
NOR: Outputs only audio-dubbed sound.
AUTO TRACKING:
▶ON: Automatically adjusts tracking.
▶OFF: Allows manual tracking when noise bars appear on the screen. (☞ P. 38)


4 6
3 5 7 MENU
1
2

Push to slide down to "VARIABLE PRESET".

Shooting mode selector:PRESET


WINDCUT ▶OFF ON
T.ALARM OFF ▶ON
ZOOM 10X▶20X 100X
ITEM : +/–
⁑MENU END SET : MENU
WINDCUT ▶OFF ON
T.ALARM OFF ▶ON
▶ZOOM 10X▶20X 100X
ITEM : +/–
MENU END SET : MENU

Selecting zoom magnification

1. Set the shooting mode selector to PRESET or VARIABLE PRESET.
2. Set the power switch to REC.
3. Press MENU.
   — The menu appears in the viewfinder.
4. Press +/– to move ▶ to ZOOM.
   - + makes ▶ go up, and - go down.
5. Press MENU until the ▶ is adjusted to the required magnification.
6. Press +/– to adjust ▶ to MENU END.
7. Press MENU.
   — The menu disappears. Setting is completed.

- To adjust WIND CUT and T(rigger) ALARM, proceed as above.

Wind cut

When set to ON, this function cuts low-level audio frequencies like the noise sometimes caused by gusts of wind as they hit the microphone.

- 🌬 will appear in the viewfinder.

Trigger alarm

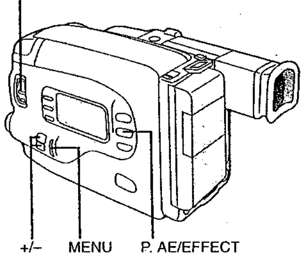
When set to "ON", the electronic alarm beeps as the recording start/stop button is pressed to start recording. It beeps twice when the recording start/stop button is pressed for the Record Pause mode.

Gain up

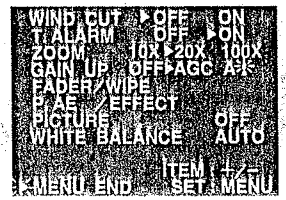
To adjust sensitivity, set the recording mode selector to VARIABLE PRESET and proceed as 2 - 7 above.

USING MENU FOR DETAILED ADJUSTMENT (Cont'd)

1 Push to slide down to "VARIABLE PRESET".

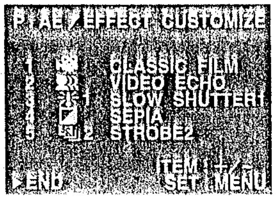


3 **10**



WIND CUT ▶OFF ON
T. ALARM OFF ▶ON
ZOOM 10X▶20X 100X
GAIN UP OFF▶AGC A
FADER/WIPE
P. AE /EFFECT
PICTURE OFF
WHITE BALANCE AUTO
ITEM : +/–
▶MENU END SET : MENU

5

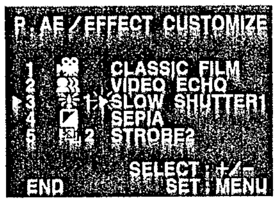


P. AE / EFFECT CUSTOMIZE
1 CLASSIC FILM
2 VIDEO ECHO
3 1 SLOW SHUTTER1
4 SEPIA
5 2 STROBE2
ITEM : +/–
▶END SET : MENU

REPLACING THE INITIALLY PRESET EFFECTS

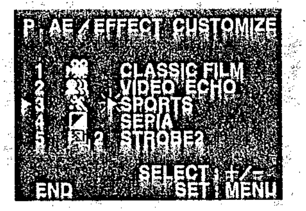
1 Set the shooting mode selector to "VARIABLE PRESET".
2 Set the power switch to REC.
3 Press MENU.
— The menu appears in the viewfinder.
4 Press +/– to move ▶ to P.AE/EFFECT.
5 Press MENU again.
— The effect menu appears. The 5 effects on the screen are initially preset.
6 Press +/- to adjust ▶ to the number of the effect to change.

7

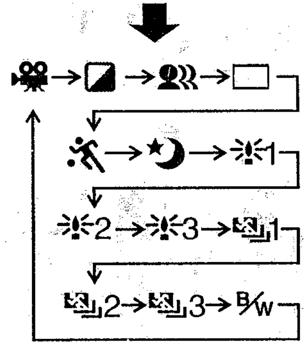


P. AE / EFFECT CUSTOMIZE
1 CLASSIC FILM
2 VIDEO ECHO
▶3 1 ▶SLOW SHUTTER1
4 SEPIA
5 2 STROBE2
SELECT : +/–
END SET : MENU

8



P. AE / EFFECT CUSTOMIZE
1 CLASSIC FILM
2 VIDEO ECHO
▶3 ▶SPORTS
4 SEPIA
5 2 STROBE2
SELECT : +/–
END SET : MENU



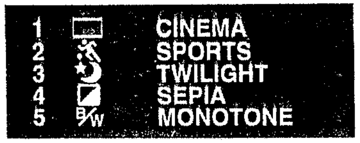
7 Press MENU. — ▶ blinks.
8 Press +/– until the required effect's indicator and name appears.
9 When finished, press MENU.
— ▶ moves to END.
- If any of the other 4 preset effects are to be replaced, repeat steps **6** - **9**.

10 Press MENU. — The first menu reappears.
11 Press MENU. — The VideoMovie enters the Record Pause mode. Setting is completed.
12 Shoot the scene with the effect activated. (☞ P. 23)
- Make sure that the shooting mode selector is set to VARIABLE PRESET.

- During **8**, pressing + changes the effect in the following sequence:
— Pressing - reverses the order.

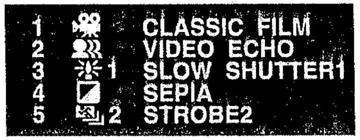
USING MENU FOR DETAILED ADJUSTMENT (Cont'd)

SHOOTING MODE SELECTOR: PRESET



1 CINEMA
2 SPORTS
3 TWILIGHT
4 SEPIA
5 B/W MONOTONE

SHOOTING MODE SELECTOR: VARIABLE PRESET

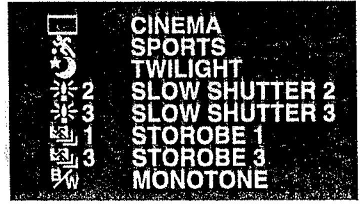


1 CLASSIC FILM
2 VIDEO ECHO
3 1 SLOW SHUTTER1
4 SEPIA
5 2 STROBE2

Effect menu (initially preset)

⬆

8 other programmed effects



CINEMA
SPORTS
TWILIGHT
2 SLOW SHUTTER 2
3 SLOW SHUTTER 3
1 STOROBE 1
3 STOROBE 3
B/W MONOTONE

EFFECTS (INDICATION, NAME & FUNCTION)

CLASSIC FILM
A strobe effect that gives the picture a "flickery" effect like an old movie, and adds black bars at the top and bottom of the picture for a wide-screen look.

SEPIA
The picture becomes reddish-brown monochrome, creating a look of an old photo.

VIDEO ECHO
The original image is reflected outward in layers.

CINEMA
Adds black bars at the top and bottom of the screen to produce a cinema-like "16:9 wide-screen" effect.

SPORTS
Automatically adjusts to high shutter speed (1/250 to 1/500) to clearly capture fast-moving action with less blur. Clarity is especially noticeable during slow motion or still playback on a video deck. Great for sports, races, etc.

- The screen becomes slightly dark. This is normal.

TWILIGHT
Makes dusk and twilight scenery, etc. look more natural and dramatic.

- Manual adjustment of white balance (☞ P. 35) and focus (☞ P. 22) is possible.

SLOW SHUTTER 1,2,3
Boosts the sensitivity so that the VideoMovie can record subjects even in virtual darkness.

- Use it only in dark locations.
- The picture flickers like quick strobe.

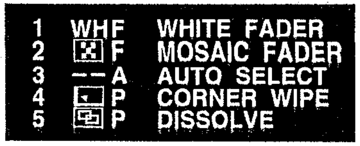
Slow shutter mode	Light sensitivity*	Shutter speed
1	2 lux	1/15 sec.
2	0.8 lux	1/6 sec.
3	0.13 lux	1 sec.

*Theoretical figure; less than measurable limit.

STROBE 1,2,3
Freezes images in rapid succession.

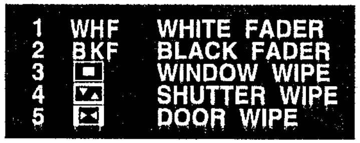
B/W MONOTONE
Turns images black-and-white, making them look more dramatic.

SHOOTING MODE SELECTOR: PRESET



1 WHF WHITE FADER
2 F MOSAIC FADER
3 --A AUTO SELECT
4 P CORNER WIPE
5 P DISSOLVE

SHOOTING MODE SELECTOR: VARIABLE PRESET

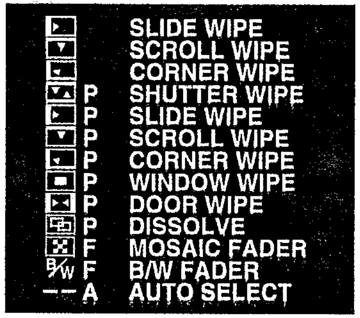


1 WHF WHITE FADER
2 BKF BLACK FADER
3 WINDOW WIPE
4 SHUTTER WIPE
5 DOOR WIPE

Fade/wipe menu (initially preset)

⬆

13 other programmed modes



SLIDE WIPE
SCROLL WIPE
CORNER WIPE
P SHUTTER WIPE
P SLIDE WIPE
P SCROLL WIPE
P CORNER WIPE
P WINDOW WIPE
P DOOR WIPE
P DISSOLVE
F MOSAIC FADER
B/W F B/W FADER
--A AUTO SELECT

- The modes with "P" (Picture) is activated only at the moment recording starts.(☞ P. 25)

FADE/WIPE MODES (INDICATION, NAME & FUNCTION)

WHF **WHITE FADER**
Fades in/out to a white screen.

BKF **BLACK FADER**
Fades in/out to a black screen.

B/W F **B/W FADER**
Fades the picture from color to black-and-white.

F **MOSAIC FADER**
Gradually turns/returns the picture into/from a mosaic pattern.

SHUTTER WIPE BY BLACK SCREEN
A black screen is pulled across the screen like a shutter.

P **SHUTTER WIPE BY PICTURE**
A new image is pulled onto the screen from above and below.

SLIDE WIPE BY BLACK SCREEN
A black screen slides across the image.

P **SLIDE WIPE BY PICTURE**
A new image slides onto the screen, pushing the previous image off-screen.

SCROLL WIPE BY BLACK SCREEN
A black screen slides up across the picture.

P **SCROLL WIPE BY PICTURE**
A new image scrolls up onto the screen.

CORNER WIPE BY BLACK SCREEN
A black screen starts in the corner and gradually fills the screen.

P **CORNER WIPE BY PICTURE**
The last-recorded frame is held in memory and shown as a still image while a new image enters the screen from the corners an moves towards the center of the screen.

WINDOW WIPE BY BLACK SCREEN
Starting from all four corners, a black screen moves towards the center of the screen.

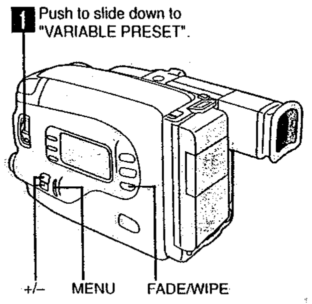
P **WINDOW WIPE BY PICTURE**
A new image enters from all four corners and moves towards the center of the screen.

DOOR WIPE BY BLACK SCREEN
A black screen opens onto the image.

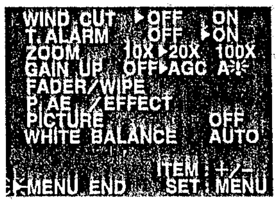
P **DOOR WIPE BY PICTURE**
A new image opens like a door onto the screen.

P **DISSOLVE**
As one image fades out, next scene fades in so that both images briefly overlap.

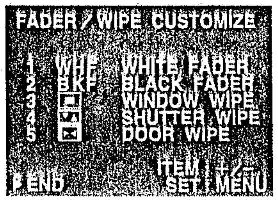
--A **AUTO SELECT**
8 fade/wipe modes are automatically generated whenever recording is started or paused, in the preset transition order.


1 Push to slide down to "VARIABLE PRESET".
+/–
MENU
FADE/WIPE

3
10


WIND CUT ▶OFF ON
T.ALARM OFF ▶ON
ZOOM 10X▶20X 100X
GAIN UP OFF▶AGC A-I
FADER/WIPE
P.AE /EFFECT
PICTURE OFF
WHITE BALANCE AUTO
ITEM : +/–
▶MENU END SET : MENU

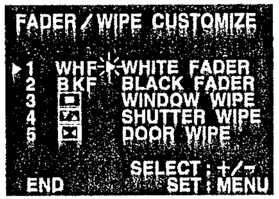
5


FADER / WIPE CUSTOMIZE
1 WHF WHITE FADER
2 BKF BLACK FADER
3 WINDOW WIPE
4 SHUTTER WIPE
5 DOOR WIPE
ITEM : +/–
▶END SET : MENU

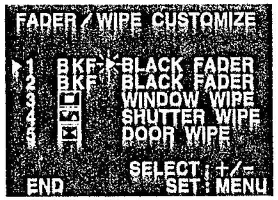
REPLACING THE INITIALLY PRESET FADE/WIPE MODES

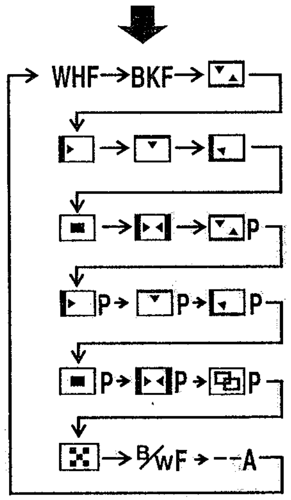
1 Set the shooting mode selector to VARIABLE PRESET.
2 Set the power switch to REC.
3 Press MENU. — The menu appears in the viewfinder.
4 Press +/– to move ▶ to FADER/WIPE.
5 Press MENU again.
— The fade/wipe menu appears. The 5 modes on the screen are initially preset.
6 Press +/– to adjust ▶ to the number of the mode to change.

7


FADER / WIPE CUSTOMIZE
▶1 WHF ▶WHITE FADER
2 BKF BLACK FADER
3 WINDOW WIPE
4 SHUTTER WIPE
5 DOOR WIPE
SELECT : +/–
END SET : MENU

8

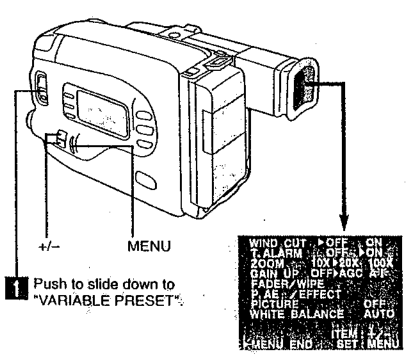

FADER / WIPE CUSTOMIZE
▶1 BKF ▶BLACK FADER
2 BKF BLACK FADER
3 WINDOW WIPE
4 SHUTTER WIPE
5 DOOR WIPE
SELECT : +/–
END SET : MENU


WHF
BKF
P
B/WF
A

7 Press MENU. — ▶ blinks.
8 Press +/– until the required mode's indicator and name appears.
9 When finished, press MENU.
— ▶ moves to END.
■ If the other 4 preset modes are to be replaced, proceed as 6 - 9.
10 Press MENU. — The first menu reappears.
11 Press MENU.
— The VideoMovie enters the Record Pause mode. Setting is completed.
12 Shoot the scene with the mode reserved. (☞ P. 24)
■ Make sure that the recording mode selector is set to VARIABLE PRESET.

■ During 8, pressing + changes mode in the following sequence:
— Pressing - reverses the order.

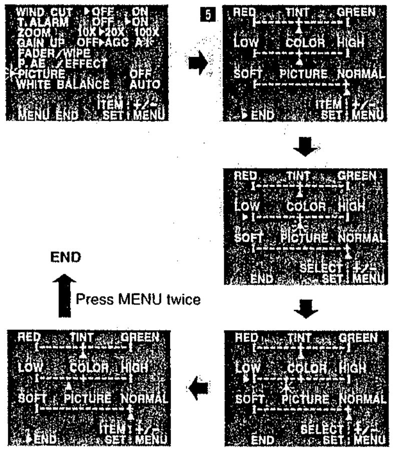
USING MENU FOR DETAILED ADJUSTMENT (Cont'd)


+/–
MENU
WIND CUT ▶OFF ON
T. ALARM OFF ▶ON
ZOOM 10X ▶20X 100X
GAIN UP OFF▶AGC A-F
FADER/WIPE
P. AE /EFFECT
PICTURE OFF
WHITE BALANCE AUTO
ITEM : +/–
MENU END SET : MENU

1 Push to slide down to "VARIABLE PRESET".

3 Menu

Picture equalization (Example: changing only color)


5
WIND CUT ▶OFF ON
T. ALARM OFF ▶ON
ZOOM 10X ▶20X 100X
GAIN UP OFF▶AGC A-F
FADER/WIPE
P. AE /EFFECT
▶PICTURE OFF
WHITE BALANCE AUTO
ITEM : +/–
MENU END SET : MENU
RED TINT GREEN
LOW COLOR HIGH
SOFT PICTURE NORMAL
ITEM : +/–
▶END SET : MENU
SELECT : +/–
END
Press MENU twice

PICTURE EQUALIZATION/WHITE BALANCE ADJUSTMENT

1 Set the shooting mode selector to VARIABLE PRESET.

2 Set the power switch to REC.

3 Press MENU. — The menu appears in the viewfinder.

Picture equalization

4 Press +/– to move ▶ to PICTURE.

5 Press MENU again.
— The picture equalization menu appears.

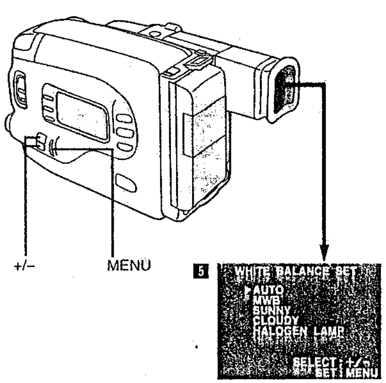
6 Press +/– to move ▶ to the item to be changed, then press the MENU button.

7 Press +/– to move ▲ as required.
- + moves ▲ to the right, and - to the left.

8 When finished adjustment, press MENU.
— ▶ moves to END.
- If the other 2 items are to be adjusted, repeat steps **6** - **8**.

9 Press MENU twice.
— The menu disappears. Setting is completed.
- To shoot with the equalized setting, make sure that the shooting mode selector is set to VARIABLE PRESET.

To resume standard setting:
Adjust ▲ of TINT, COLOR and PICTURE to + in the picture equalization menu.


+/–
MENU
5
WHITE BALANCE SET
▶AUTO
MWB
SUNNY
CLOUDY
HALOGEN LAMP
SELECT : +/–
SET : MENU

White balance menu

Useful tip:
It is helpful to connect your VideoMovie to a color monitor when adjusting the picture equalization/white balance.

White balance

This VideoMovie's Automatic Color Temperature system senses the color temperature of the ambient lighting for automatic white balance adjustment. However, precise color temperature adjustment is not possible under the following conditions:
- The object is in various shades of the same color.
- Predominantly red or brown object is being shot outdoors.

In these cases, use the VideoMovie's built-in preset filters for white balance adjustment.

4 Press +/– to move ▶ to WHITE BALANCE.

5 Press MENU again. — The white balance menu appears.

6 Press +/– to move ▶ to the mode to select.

MWB mode
In the MWB mode, the VideoMovie automatically adjusts the color temperature of the subject's light source and keeps that color temperature during shooting. When shooting some subjects with different color temperatures, use the MWB mode to set a color temperature and you can shoot with natural colors that are not affected by surroundings.

7 Point the VideoMovie at a white, flat object such as a sheet of white paper.
Adjust focus manually. (☞ P. 22)

8 Keep MENU pressed until "MWB" starts to blink.
— The white balance setting is locked and completed, and the menu reappears.
— The VideoMovie is now ready for shooting.

Other modes

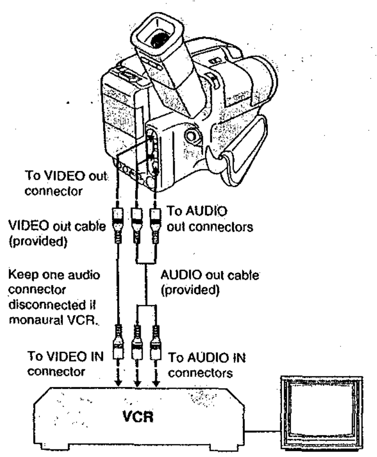
CLOUDY	When you shoot in the daytime outdoors (cloudy day)
SUNNY	When you shoot in the daytime outdoors (sunny day)
HALOGEN LAMP	When the source of illumination is a halogen or tungsten lamp.

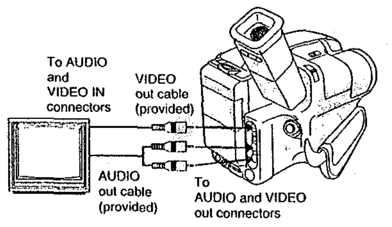
7 Press MENU twice. — Setting is completed.

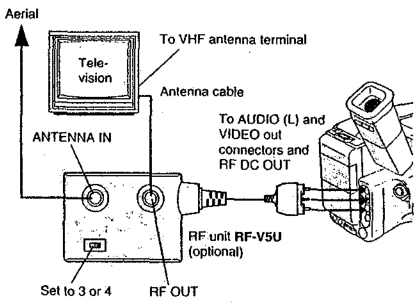
Notes:
- Re-adjust the MWB mode in the following conditions:
  - When the lighting has changed.
  - When the VideoMovie has been turned off and on again.
- To shoot with the adjusted white balance, make sure that the shooting mode selector is set to VARIABLE PRESET.

To resume automatic white balance setting:
Move ▶ to AUTO in the white balance menu.

CONNECTIONS TO A VCR OR A TELEVISION


To VIDEO out connector
VIDEO out cable (provided)
To AUDIO out connectors
Keep one audio connector disconnected if monaural VCR.
AUDIO out cable (provided)
To VIDEO IN connector
To AUDIO IN connectors
VCR


To AUDIO and VIDEO IN connectors
VIDEO out cable (provided)
AUDIO out cable (provided)
To AUDIO and VIDEO out connectors


Aerial
Tele-vision
To VHF antenna terminal
Antenna cable
To AUDIO (L) and VIDEO out connectors and RF DC OUT
ANTENNA IN
RF unit RF-V5U (optional)
Set to 3 or 4
RF OUT

Also refer to the instruction manual for your VCR or TV when connecting the VideoMovie to them.

Connection to a VCR

In this situation, use the A/V output cable.

1. Connect the VideoMovie and the VCR as shown in the diagram on the left.
2. Turn on the VideoMovie, the VCR and TV.
3. Correctly insert the S-VHS-C or VHS-C cassette into the VideoMovie.
4. Set the VCR to AUX(iliary) input mode, and the TV to the VIDEO mode.

If the VCR is an S-VHS unit:
You can also connect the VideoMovie's S-OUT connector to the VCR's S-VIDEO IN (or S-VHS IN) terminal using the provided S-VIDEO cable. This can improve playback picture quality.

For audio connection to a stereo system:
You can connect the VideoMovie's A/V output audio L and R connectors to the AUDIO IN connectors of a Hi-Fi stereo audio system to enjoy the VideoMovie's Hi-Fi VHS stereo sound capability.

- Use the menu system to select audio output. (☞ P. 26)

CAUTIONS:

- The VideoMovie has a wide dynamic range in the Hi-Fi audio mode. It is recommended that you check the maximum level if you are going to listen to the Hi-Fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If neither is shielded, do not place the speakers adjacent to the television, otherwise the video playback picture will have interference.

Connection to a television equipped with A/V input connector

In this situation, use the A/V output cable.

- Connect the AUDIO and VIDEO out connectors of the VideoMovie to the A/V input connector of the television.
- Use the Video (or AV) mode specified in the TV's instruction manual. (instead of tuning to channel 3 or 4.)

If the TV is also equipped with an S-VIDEO IN terminal:
You can also connect the VideoMovie's S-OUT connector to the TV's S-VIDEO IN (or S-VHS IN) terminal using the provided S-VIDEO cable. This can improve playback picture quality.

Connection to a television not equipped with A/V input connector

In this situation, use the RF unit. For details, refer to the instructions of the RF-V5U.

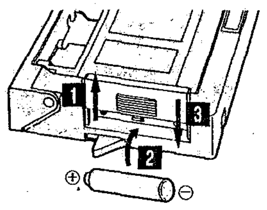
Viewing video cassettes being played back with the VideoMovie:
To view video cassettes or to monitor the recording, set the TV channel selector to the channel number you selected on the RF unit. (channel 3 or 4)

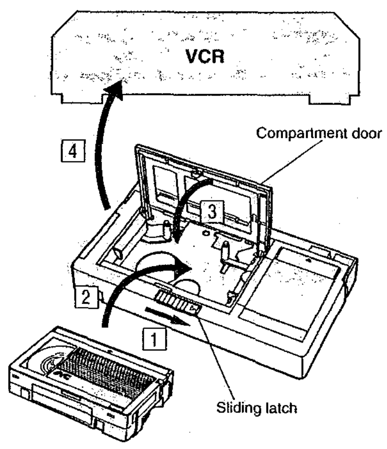
Viewing television programs:
Your television will function the same as before. Just change your channel to the one you wish to watch.

Helpful hints:

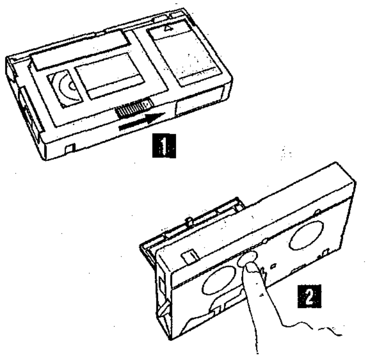
- It is recommended to use the Multi AC Charger/Adapter as the power supply rather than the battery pack.
- It is possible to monitor the picture and sound from the VideoMovie even when a cassette tape is not loaded. Set the power switch to "REC". When you select the television input from your VideoMovie, the audio and video can be monitored.

PLAYBACK




VCR
Compartment door
4
3
2
1
Sliding latch

Compact video cassette



USING THE CASSETTE ADAPTER

By using the provided cassette adapter (VHS Playpak: C-P6U), a S-VHS or VHS video cassette recorded with this VideoMovie can be played back with any VHS video recorder. When the S-VHS-C or VHS-C video cassette is installed in the cassette adapter, it is fully compatible for both recording and playback on any VHS video recorder. The C-P6U cassette adapter is battery-powered and will automatically perform tape loading and unloading.

Note:
Only compact video cassette tapes marked S-VHS-C or VHS-C can be used with the cassette adapter.

Inserting the battery into the cassette adapter

1. Remove the battery cover by sliding it up.
2. Install one "AA(R6)" size battery as shown.
3. Reattach the cover.

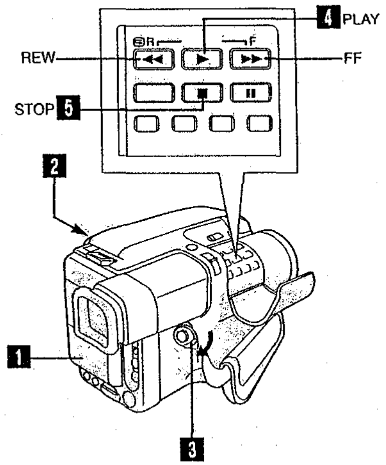
Playback on the VCR

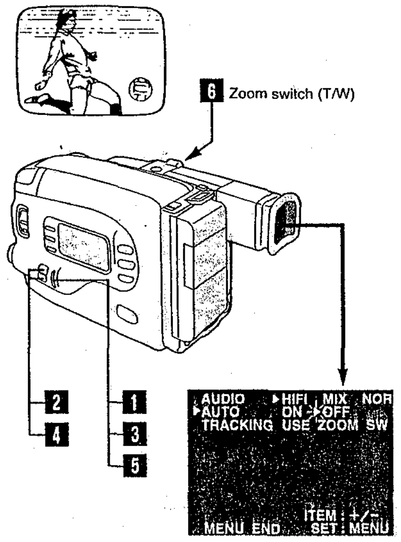
1. Open the compartment door by sliding the latch.
2. Insert the compact video cassette.
3. Close the compartment door. The tape is loaded.
4. Insert the cassette adapter into the VCR.
5. Playback the tape.

Note:
During special-effect playback (slow motion, still frame, etc.), the picture may vibrate or noise bars may appear on the screen.

Removing the compact video cassette

1. Slide the sliding latch.
   — The tape will be unloaded and the compartment door will open.
2. Insert your finger into the hole on the underside of the adapter, push the cassette up from below and remove it.





The VideoMovie permits playback of recorded "S-VHS-C" or "VHS-C" video cassettes.
For connections refer to pages 36 and 37.

PLAYBACK OPERATION

1. Preparations

1. Supply power. (Battery or AC operation: ☞ P. 11)
2. Insert a pre-recorded "S-VHS-C" or "VHS-C" cassette.
   - Ensure that tape is not slack inside the cassette, then load the cassette correctly. ☞ P. 15.

2. To playback a cassette

3. Set the power switch to "PLAY".
   — The power indicator lights.
4. Press PLAY.
   — Playback starts and playback picture appears on the viewfinder screen and connected TV.

3. To stop playback

5. Press STOP.
   - After about 5 minutes in Stop mode, the VideoMovie switches itself off automatically.
     (To turn on the VideoMovie again, set the power switch to "OFF" first and then back to "PLAY".)

REWIND OR FAST-FORWARD THE TAPE

To rewind the tape:
When in the stop mode, press REW.
— For high speed rewind, hold REW for more than 2 seconds. (The elapsed time counter changes to "-:--:--".)

To fast-forward the tape:
When in the stop mode, press FF.
— For high-speed fast-forward, hold FF for more than 2 seconds. (The elapsed time counter changes to "-:--:--".)

Note:
The elapsed time counter indication and counter memory function (☞ P. 39) do not function when using the high-speed REW or high-speed FF mode.

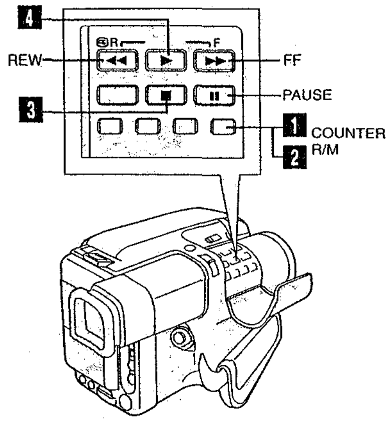
MANUAL TRACKING

If noise bars appear on the screen, the tracking needs to be adjusted.

1. Press MENU during playback.
   — The menu appears in the display.
2. Press +/– to move ▶ to AUTO TRACKING.
3. Press MENU to move ▶ to OFF.
4. Press +/– to move ▶ to MENU END.
5. Press MENU. — The menu disappears.
6. Slide the zoom switch up and down to adjust to the best picture possible.

To resume automatic tracking:
Move ▶ to AUTO TRACKING ON in the menu during playback, or unload the cassette.

Note:
The tracking adjustment may not be effective on tapes recorded on another VCR's or VideoMovies.



TAPE DUBBING (Master Edit Control)

1. Connect the VideoMovie to the VCR. (☞ P. 36)
   — Also connect the VideoMovie's EDIT jack to a JVC VCR's Remote PAUSE terminal with editing cable. (If the VCR does not have a Remote PAUSE jack, you can use the R.A.EDIT jack, if available.)
2. Locate the edit-out point and engage counter memory. (Press COUNTER R/M for more than 2 seconds, and then press it again for less than 1 second.)
3. Press REW. At the edit-in point, press STOP.
4. Engage the VideoMovie's Playback-Still mode and the VCR's Record-Pause mode.
5. Press EDIT.
   — The VideoMovie starts playback, and the VCR starts recording.
6. When the tape counter reaches "0:00:00", the VideoMovie enters Playback-Still mode, and the VCR enters Record-Pause mode.
   - To finish dubbing, press STOP buttons on both the VideoMovie and the VCR.

Note:
To stop dubbing temporarily, press the VideoMovie's PAUSE button. To resume dubbing, press the EDIT

STILL PLAYBACK

Press PAUSE during playback.
— The picture stops on the screen.
- To protect the tape and to conserve power, the VideoMovie will enter the stop mode and turn itself off after 5 minutes of still playback.

SHUTTLE SEARCH

Fast-speed forward playback:
Press FF during playback.
— Playback speed of the tape will be 3 times the normal speed in the SP mode, and 7 times in the EP mode.

Fast-speed reverse playback:
Press REW in the Play mode.
— Reverse playback speed of the tape will be 3 times the normal speed in the SP mode, and 7 times in the EP mode.

Notes:
- For brief fast-speed searching, hold FF or REW for more than 2 seconds. When the button is released, the search ends and the tape will play.
- Noise bars will appear and pictures may become monochrome while in Still Playback or Shuttle Search. This is not due to any defect of the unit.

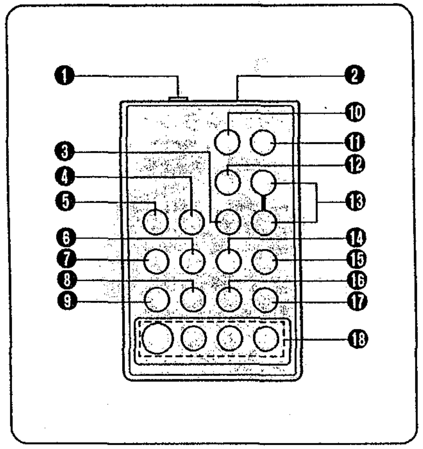
COUNTER MEMORY FUNCTION

This VideoMovie incorporates a counter memory function which facilitates locating a specific tape segment.

1. Press COUNTER R/M for more than 2 seconds.
   — Resets the counter to "0:00:00".
2. Press COUNTER R/M for less than 1 second. — "M" appears.
3. After recording or playback, press STOP, then REW.
   — The tape will automatically stop at the counter reading of around "0:00:00".
4. Press PLAY. — Playback starts.

Notes:
- The counter memory functions in the Fast-Forward and Rewind modes.
- The counter memory is reset when the high-speed Fast-Forward or Rewind mode is used.
- To cancel the memory function, press COUNTER R/M so that the "M" disappears.
- The counter memory is reset when power is removed from the VideoMovie.

USING THE PROVIDED REMOTE CONTROL UNIT



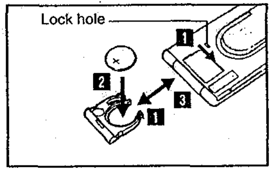
RM-V706U REMOTE CONTROL UNIT

The RM-V706U Full-Function MBR (Multi-brand Remote) can operate this VideoMovie from a distance as well as the basic operations (PLAY, STOP, PAUSE, FF, and REW) of your VCR. This remote control unit is useful when dubbing from the VideoMovie to your VCR, and it makes additional recording functions possible.

Inserting the battery

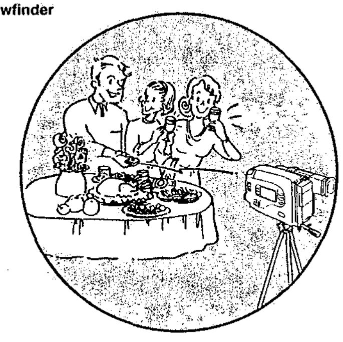
1. Pull out the battery holder while sliding the lock hole.
2. Insert the lithium battery (CR2025), with its plus (+) side up, into the battery holder.
3. Replace the battery holder until it clicks in place.

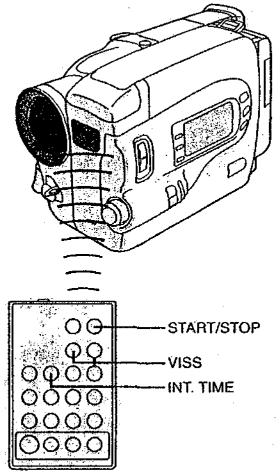
*Read warning on lithium battery. (☞ P. 2)



Buttons	Functions	
	With the VideoMovie's power switch set to "REC".	With the VideoMovie's power switch set to "PLAY".
① PAUSE IN connector	—	☞ P. 47
② Infrared beam transmitting window	Transmits the beam signal.	
③ MBR SET button	—	☞ P. 45
④ INT. TIME button	Self-Timer/Time lapse (☞ P. 41, 43)	—
⑤ REC TIME button	Animation/Time lapse (☞ P. 42, 43)	—
⑥ FF button	Retake (Forward)	FF/FF Shuttle Search
⑦ REW button	Retake (Rewind)	Rew/Rew Shuttle Search
⑧ PAUSE button	—	Pause
⑨ PLAY button	—	Playback start
⑩ SNAPSHOT button	Functions same as the SNAPSHOT button of the VideoMovie.	—
⑪ START/STOP button	Functions same as the Recording Start/Stop button of the VideoMovie.	—
⑫ VISS button button	Index code marking (☞ P. 41)	—
⑬ ZOOM(T/W) buttons	Slow-speed zoom (☞ P. 18)	—
⑭ VCR CTL button	—	☞ P. 45
⑮ A. DUB button	—	Audio dubbing (☞ P. 44)
⑯ STOP button	—	Stop
⑰ INSERT button	—	Insert Editing (☞ P. 44)
⑱ R. A. EDIT buttons	—	☞ P. 46

Viewfinder





RM-V706U
(provided)

INDEX CODE MARKING

The VHS Index Search System (VISS) gives you automatic access to any point you select on a recording. Only the marking aspect of the Index Search System is included in this unit. It allows index codes to be placed on recorded tape for convenient dubbing or editing on VCRs with an Index Search function.

Marking

The RM-V706U remote control unit allows index codes to be marked in any desired position.

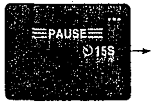
1. Press VISS once to put an index code onto the tape.
   — "INDEX" blinks during the marking process.

- If VISS has been pressed in the Record-Pause mode, an index code is put at the point where START/STOP is pressed.

SELF-TIMER

This Self-Timer function allows you to set the amount of time delay before recording starts after Start/Stop has been pressed. If the VideoMovie has been secured, the operator can enter the picture before actual recording begins.

1. Put the VideoMovie into the Record-Pause mode.
2. Press INT. TIME to select the interval time.
   — The following sequence of time setting is displayed with each press of INT. TIME:



→ 15S → 30S → 1MIN → 5MIN
(regular recording mode)

Viewfinder

3. Press START/STOP.
   - When the selected time has elapsed, recording begins automatically.
   - When performing Self-Timer shooting, the tally lamp will start blinking approximately 10 seconds before the actual recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.

To release the Self-Timer mode:

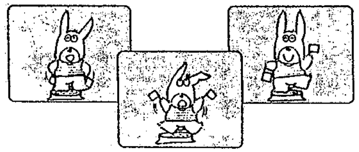
When "–" is not blinking:
Press INT. TIME continuously until "⏱" goes off.

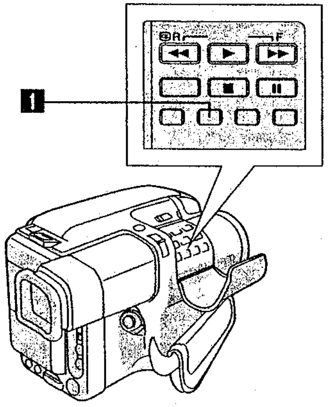
When "–" is blinking:
Press Start/Stop to stop the blinking, then press INT. TIME continuously until "⏱" goes off.

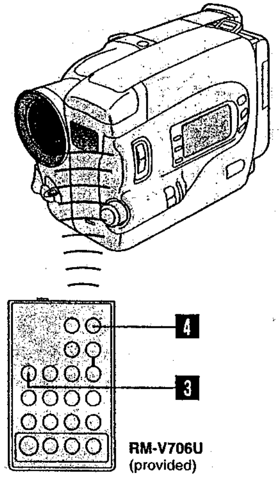
- Turning the power off and on once engages the regular Record-Pause mode.

USING THE PROVIDED REMOTE CONTROL UNIT (Cont'd)

ANIMATION



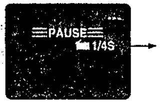




RM-V706U
(provided)

The Animation function produces the illusion of movement in otherwise stationary scenes or objects. This technique is accomplished by shooting a series of slightly different pictures of the same scene or slightly different poses of the same object for a brief period of time.

1 Set SP/EP to "SP".
2 Put the VideoMovie in the Record-Pause mode.
3 Press REC TIME to select the recording time.
— The following sequence of time setting is displayed with each press of REC TIME:



→ 1/4S ——→ 1/2S ——→ 1S → (regular recording mode)

Viewfinder

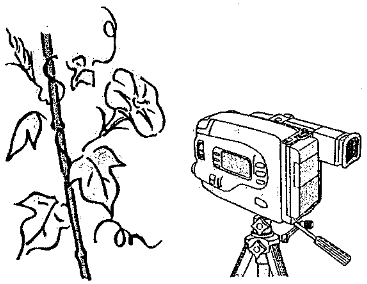
4 Press START/STOP after focusing on the subject.
- Recording stops automatically in the Record-Pause mode after the selected period of time.

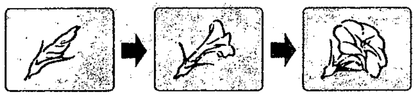
5 Repeat steps 3–4 for the required number of pictures.
6 Playback the recorded series to check if results were satisfactory.

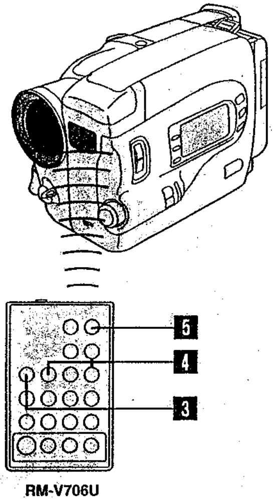
To release the Animation mode:
Press REC TIME until " 🎥 " in the viewfinder disappears.
- The Animation mode can only be engaged from the Record-Pause mode.

Notes:
- Keep the VideoMovie steady in one position when filming the series of shots for best results. Mounting the VideoMovie on a tripod is recommended.
- Before recording in the Animation mode at the very beginning of a tape, set the VideoMovie to the Recording mode for about 5 seconds, so that the tape runs smoothly. Using the Fade-in function at this point is a good way to begin an animated program.
- Fade-in/out is not possible during Animation or Time-Lapse shooting.
- When shooting in the Animation mode, the elapsed time counter reading may be incorrect. This is not due to any defect of the unit.

TIME-LAPSE



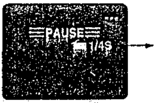




RM-V706U
(provided)

The Time-Lapse function allows automatic sequential on/off recording at preset time spans. With the VideoMovie continuously focused on a specific scene or object, the resulting recording will show subtle changes (such as shifts in cloud formations, plant growth etc.) over an extended period of time.

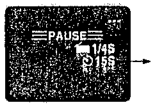
1 Set SP/EP to "SP".
2 Put the VideoMovie into the Record-Pause mode.
3 Press REC TIME to select the recording time.
— The following sequence of time settings is displayed with each press of REC TIME:



→ 1/4S ——→ 1/2S ——→ 1S → (regular recording mode)

Viewfinder

4 Press INT. TIME to select the interval time.
— The following sequence of time settings is displayed with each press of INT. TIME:



→ 15S → 30S → 1MIN → 5MIN → (regular recording mode)

Viewfinder

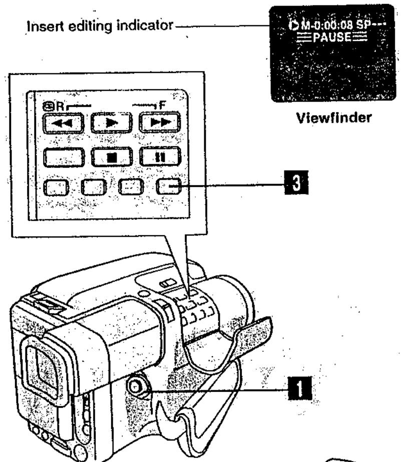
5 Press START/STOP to start the Time-Lapse recording. The selected recording time and interval will alternate automatically.
- The tally lamp functions in the same way as in Self-Timer shooting.

To release the Time-Lapse mode:

When "–" is not blinking:
Press INT. TIME and REC TIME continuously until " 🎥 " and " ⏲ " go off.
When "–" is blinking:
Press Start/Stop to stop the blinking, then press the INT. TIME and REC TIME continuously until " 🎥 " and " ⏲ " go off.

Note:
When shooting in the Time-Lapse mode, the elapsed time counter reading may be incorrect. This is not due to any defect of the unit.

USING THE PROVIDED REMOTE CONTROL UNIT (Cont'd)



INSERT EDITING

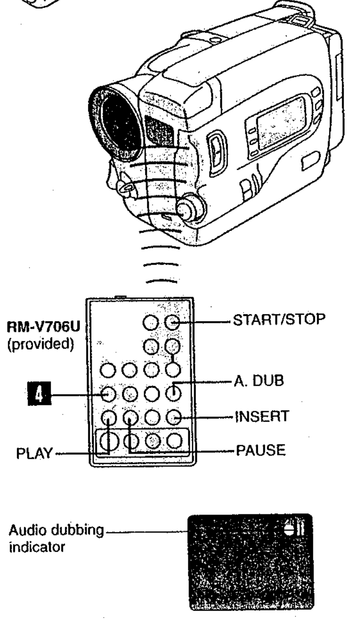
Insert editing means recording a new scene into a section of prerecorded tape so that a part of the original recording can be replaced with a new sequence without excessive picture distortion at the edit-in and edit-out points. In the Insert Editing mode, the original audio on the normal audio track remains unchanged.

1 Set the power switch to "PLAY".
2 Locate the desired edit-out point on the tape and press PAUSE.
3 Press COUNTER R/M for more than 2 seconds, then press it once again for less than 1 second.
4 Press REW to rewind the tape a little beyond the beginning of the scene you wish to insert.
5 Press PAUSE exactly at the beginning of the scene to insert.
6 While holding INSERT pressed, press PAUSE.
— The VideoMovie enters the Insert Editing mode with the scene at which the VideoMovie is aimed appearing on the screen for monitoring.
7 Press START/STOP to insert the new sequence.

- When the counter reading of "0:00:00" is reached, insert editing stops automatically and the VideoMovie enters the Playback mode.

Notes:

- When in the Still mode, the counter indication may be blurred. This is normal.
- When the tape reaches the preset edit-out point during the editing operation, it may stop slightly before or after the designated point on the tape. Also, at that time, noise bars may appear momentarily. Neither of these is a defect of the unit.
- Only video and Hi-Fi audio signals are recorded in the Insert Editing mode. When the normal sound is to be recorded, press A. DUB and PAUSE simultaneously in the Insert Pause mode. When INSERT and PAUSE are pressed simultaneously again, the unit re-enters the Video-and-Hi-Fi-audio-signals-only Recording mode.



AUDIO DUBBING

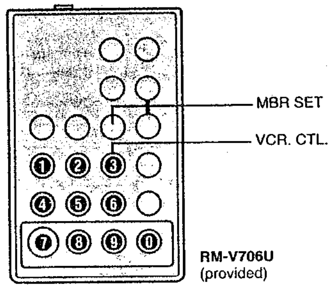
Audio dubbing means recording a new soundtrack on a pre-recorded tape, i.e., replacing the original sound with new audio material.
Audio dubbing is applicable only to the longtudial audio track (normal audio). Audio dubbing on the Hi-Fi audio track cannot be performed.

Precautions

- Tapes with their safety tabs removed cannot be audio dubbed. Reseal the safety tab slot to perform the dubbing.
- If whistling or howling is heard during audio dubbing, reduce the TV volume or move the mike farther away from the TV.

1 - 5 : Same as the insert editing (above).
6 While pressing A.DUB, press PAUSE to enter the Audio Dub Standby mode.
7 Press PLAY. — Audio dubbing begins.

- When the counter reading of "0:00:00" is reached, audio dubbing stops automatically and the VideoMovie enters the Playback mode.
- An external microphone can be used for audio dubbing. Connect it to the MIC jack.



VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
GE	❶ ❶ ❾ ❷ ❾ ⓿ ❾ ❹
HITACHI	❻ ❻ ❻ ❸
JVC A	❾ ❶
B	❾ ❻
C	❾ ❸
MAGNAVOX	❾ ❺ ❶ ❶ ❼ ❶ ❼ ❻
MITSUBISHI	❻ ❼ ❻ ❽
NEC	❸ ❼ ❸ ❽
PHILIPS	❶ ❾ ❾ ❺ ❶ ❶ ❾ ❹ ❾ ❶ ❾ ❻ ❶ ❷ ❸ ❸

VCR BRAND NAME	BUTTONS (A) (B)
PANASONIC	❶ ❸ ❶ ❼ ❶ ❶ ❾ ❹ ❶ ❽
RCA	❾ ❷ ❾ ❹ ❻ ❻ ❻ ❸ ❾ ⓿
SANYO	❸ ❻ ❸ ❺
SHARP	❶ ❻ ❶ ⓿
SONY	❻ ❺ ❻ ⓿ ❸ ❾ ❸ ❶
TOSHIBA	❻ ❾ ❻ ❶
ZENITH	❶ ❻

RANDOM ASSEMBLE EDITING (R.A.Edit)

This function makes it easier to create edited videos when your VideoMovie is used as the source player in combination with your VCR. You can pre-select up to 8 scenes or "cuts" for automatic editing in the sequence you have specified. Random Assemble Editing can be more conveniently done if the RM-V706U MBR (Multi Brand Remote, provided) has been set to correspond to the brand of your VCR.

1 How to set the remote control unit to correspond to the brand of your VCR:

Turn the VCR's power off before starting.

1 Point the remote control toward the VCR's infrared beam sensor window.
2 Refer to the list on the left, and while pressing MBR SET, press button (A), then press button (B).
3 Release MBR SET.

- The code is set and the VCR's power automatically comes on.
  If your VCR has more than one code, choose the code with which you can turn the VCR's power on.
  (With some VCR brands, power won't come on automatically. In this case, turn the VCR power on manually and check to see if the remote control buttons work with the VCR.)

2 How to operate the VCR:

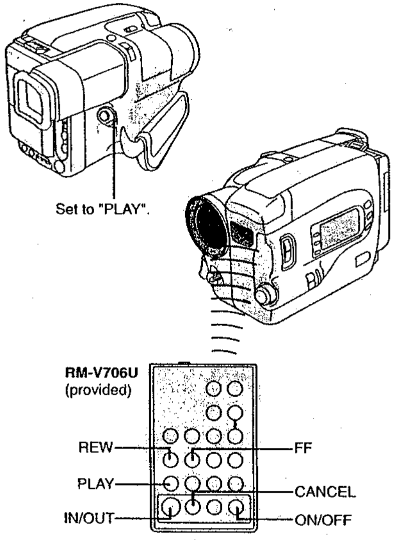
1 Turn the VCR's power ON.
2 Press the button on the remote control unit corresponding to the function you want to operate while pressing VCR CTL.

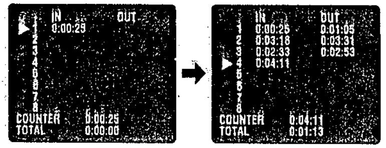
- Since the remote control unit has a number of operation codes, determine the appropriate code for operating your VCR by confirming correct VCR operations according to the steps above.
- The VCR functions that the RM-V706U can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY. Among them, VCR REC STBY button doesn't need to be pressed along with VCR CTL.
- If the RM-V706U is not able to control the VCR, use the controls on the VCR.

IMPORTANT:
Although the MBR (Multi-Brand Remote Control) is compatible with JVC VCRs, as well as many VCR models manufactured by others, it is possible that this remote control will not work with your VCR or may offer limited functions.

(Continued on next page.)

USING THE PROVIDED REMOTE CONTROL UNIT (Cont'd)


Set to "PLAY".
RM-V706U
(provided)
REW
PLAY
IN/OUT
FF
CANCEL
ON/OFF


IN
OUT
1 0:00:25
2
3
4
5
6
7
8
COUNTER 0:00:25
TOTAL 0:00:00
IN
OUT
1 0:00:25 0:01:05
2 0:03:18 0:03:31
3 0:02:33 0:02:53
4 0:04:11
5
6
7
8
COUNTER 0:04:11
TOTAL 0:01:13

Preparations

- Connect the VideoMovie and the recording deck as per the diagram on the right (P. 47).
  - A: If the recording deck is a JVC VCR that has a Remote PAUSE terminal, connect the Editing cable to it. (If the VCR does not have a Remote PAUSE terminal, connect to the R.A.EDIT connector.)
  - B: If the VCR has neither a Remote PAUSE nor an R.A.EDIT connector, connect the Editing cable to the RM-V706U's Pause-In jack.
- VideoMovie: Correctly insert a recorded tape and set the power switch to "PLAY".
- VCR: Turn power on. Insert a recordable tape, and set to the AUX(iliary) mode. Refer to VCR's manual for details.

To select up to 8 scenes

1 Press PLAY.

2 Press ON/OFF.
- The R. A. Edit counter display will appear in the viewfinder and on the TV screen.

3 Use FF or REW to search for the beginning of a scene you want, press IN/OUT.
- The in-point's counter reading is registered on the display.

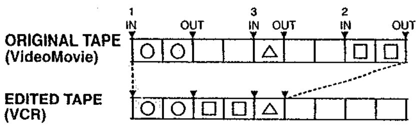
4 Use FF or REW to search for the end of the scene you want, press IN/OUT again.
- The out-point's counter reading is registered on the display.
- The "TOTAL" reading shows the total running time of the edited scenes.

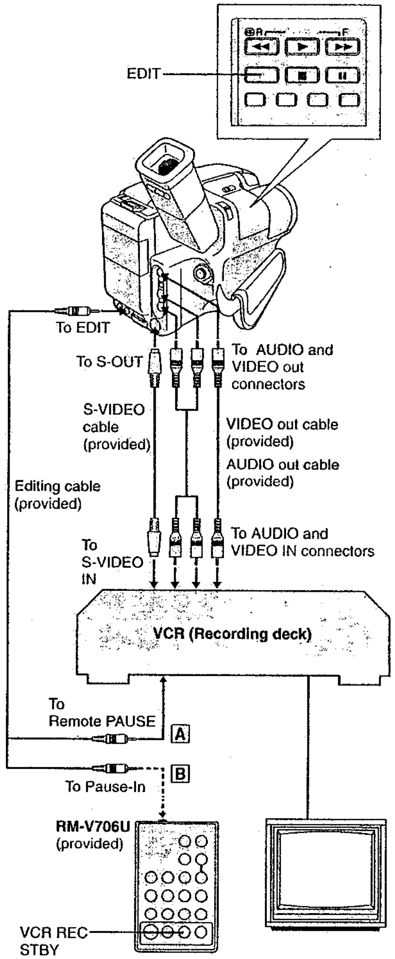
5 Specify additional scenes by repeating steps 3 – 4.

Notes:

- For any scene, the out-point must have a counter reading that is at least 1 second after the in-point. An out-point with a counter reading less than or the same as the in-point will not be registered.
- Since the VideoMovie prerolls during R. A. Edit, there must be at least 15 seconds worth of recording material prior to any in-point on the playback tape.
- Blank portions of tape cannot be registered as in- or out-points.
- If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.
- Pressing the ON/OFF button will clear all in- and out-points from memory.
- Do not press COUNTER R/M during or after selecting the in/out points; this will reset the counter and cause R.A. Edit to function improperly.
- When editing, a slight discrepancy between the counter reading and actual in- and out-points may occur. Please position your in- and out-points with enough leeway so that segments will be recorded in their entirety (not cut off).

(Continued on next page.)


ORIGINAL TAPE
(VideoMovie)
EDITED TAPE
(VCR)
1
IN
OUT
3
IN
OUT
2
IN
OUT


EDIT
To EDIT
To S-OUT
To AUDIO and VIDEO out connectors
S-VIDEO cable (provided)
VIDEO out cable (provided)
AUDIO out cable (provided)
Editing cable (provided)
To S-VIDEO IN
To AUDIO and VIDEO IN connectors
VCR (Recording deck)
To Remote PAUSE
A
B
To Pause-In
RM-V706U
(provided)
VCR REC STBY

To make corrections

During steps 3 and 4 on the previous page, pressing CANCEL will erase the last in- or out-point. Pressing again will erase the point before that, and so on.

For automatic editing to a VCR

1 Put the VCR in the Record-Pause mode. RM-V706U can also be used.
- Point the remote control toward the VCR's infrared sensor window and press VCR REC STBY.
- Be sure that the VCR enters the Record-Pause mode. If not, use the controls on the VCR to enter the Record-Pause mode.

Note:
With some manufacturer's VCR's, pressing VCR REC STBY may not place the VCR into the Record-Pause mode.

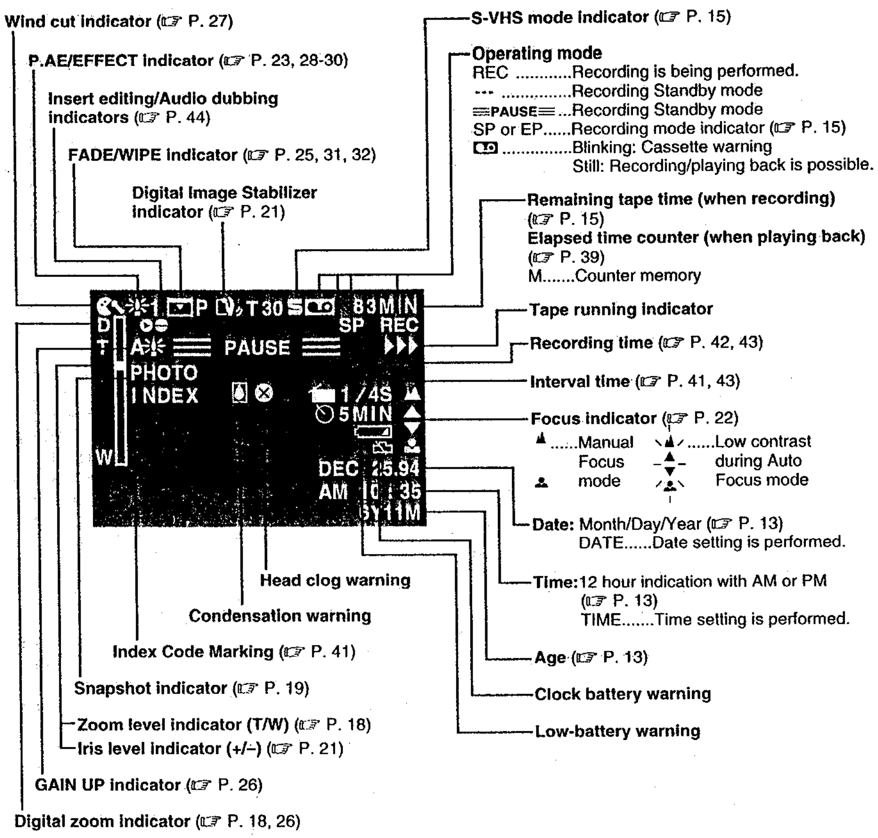
2 Press the VideoMovie's EDIT.
- The function begins automatic editing; all the scenes are copied to the VCR in the specified order.
- Keep the remote control pointed toward the VCR's remote sensor window. (in case of B)
- The on-screen display remains superimposed while the VideoMovie searches for each scene (the blinking cursor points to the scene number presently being searched), and is not displayed while the scenes are being edited.
- When R. A. Edit is finished, the VideoMovie enters the Still mode and the VCR enters the Record-Pause mode. Press STOP on both units to end R. A. Edit.

To dub the entire tape without any edits

To make a duplicate copy of the VideoMovie's tape, perform R. A. Edit by specifying only one in-point (and no out-point). R. A. Edit will automatically dub everything from that in-point to the end of the tape.

Note:
With some VCR models, there may be noise at the in- or out-points on the edited tape.

INDICATIONS


Wind cut indicator (☞ P. 27)
P.AE/EFFECT indicator (☞ P. 23, 28-30)
Insert editing/Audio dubbing indicators (☞ P. 44)
FADE/WIPE indicator (☞ P. 25, 31, 32)
Digital Image Stabilizer indicator (☞ P. 21)
S-VHS mode indicator (☞ P. 15)
Operating mode
REC ....Recording is being performed.
--- ....Recording Standby mode
≡PAUSE≡...Recording Standby mode
SP or EP......Recording mode indicator (☞ P. 15)
▣ ....Blinking: Cassette warning
Still: Recording/playing back is possible.
Remaining tape time (when recording) (☞ P. 15)
Elapsed time counter (when playing back) (☞ P. 39)
M.......Counter memory
Tape running indicator
Recording time (☞ P. 42, 43)
Interval time (☞ P. 41, 43)
Focus indicator (☞ P. 22)
......Manual Focus mode
......Low contrast during Auto Focus mode
Date: Month/Day/Year (☞ P. 13)
DATE......Date setting is performed.
Time: 12 hour indication with AM or PM (☞ P. 13)
TIME.......Time setting is performed.
Age (☞ P. 13)
Clock battery warning
Low-battery warning
Head clog warning
Condensation warning
Index Code Marking (☞ P. 41)
Snapshot indicator (☞ P. 19)
Zoom level indicator (T/W) (☞ P. 18)
Iris level indicator (+/-) (☞ P. 21)
GAIN UP indicator (☞ P. 26)
Digital zoom indicator (☞ P. 18, 26)
1 P T 30 83MIN
D SP REC
T PAUSE ▶▶▶
PHOTO
INDEX ⊗ 1/4S
5MIN
W
DEC 25.94
AM 10:35
5Y11M

Warning Indications

LOW-BATTERY WARNING (▭)

When the battery power is coming to an end, a battery warning indication blinks in the viewfinder. After indication appears, the power turns off automatically. Replace the battery pack with a fully charged one.

CLOCK BATTERY WARNING (⏱)

Blinks when the lithium battery is not in place or exhausted. In this condition, no date/time function is available.

CONDENSATION WARNING (▣)

Appears when the excessive moisture condensation occurs inside the unit.

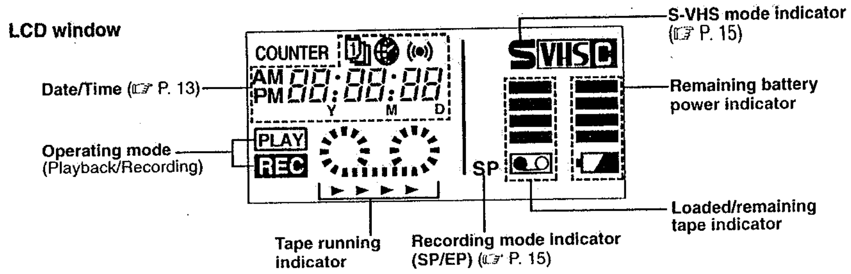
CASSETTE WARNING (▣)

Blinks to warn that no cassette or a cassette without safety tab is loaded.

HEAD CLOG WARNING (⊗)

Appears when video head clogging occurs.

LCD window


Date/Time (☞ P. 13)
Operating mode (Playback/Recording)
COUNTER
AM 88:88:88
PM
Y M D
PLAY
REC
SP
S-VHS mode indicator (☞ P. 15)
Remaining battery power indicator
Loaded/remaining tape indicator
Tape running indicator
Recording mode indicator (SP/EP) (☞ P. 15)

HELPFUL TERMS AND INFORMATION

The following glossary is for your convenience in helping you better understand your VideoMovie and its operation.

AGC (Auto Gain Control):
Automatically increases camera sensitivity when the illumination falls below a certain level.

Animation:
By shooting the same inanimate subject repeatedly with slight variations each time, the illusion of motion can be created.

Audio dubbing:
Allows you to replace only the linear audio portion in a previously recorded scene (for adding narration, etc.).

AUX mode:
Refers to Auxiliary mode. When the VideoMovie is connected to a VCR for editing or dubbing, the VCR should be set to this mode.

AV:
Short for Audio/Video. Often refers to the audio (sound) and video (picture) signals which, when combined, make up a program.

CCD (Charge Coupled Device):
Solid-state imaging device used in VideoMovies as the camera's image pickup; analogous to the eye's retina except that picture information is output as electric signals.

Color temperature:
A measurement in Kelvin degrees which indicates the color contents of a light source; bluish light has a higher color temperature than reddish light. To reproduce white as white under different types of lighting, the chrominance signal must be adjusted to match the light source's color temperature. (See "White balance".)

Head:
An electronic component which "writes" or "reads" video signals on the tape.

HQ (High Quality):
An enhancement feature in the VCR circuitry which provides greater picture detail.

Lithium battery:
Necessary for VideoMovie's clock and date/time/character settings, and for use of the RM-V706U Remote Control Unit. Use only CR2025.

Master Edit Control:
Lets a VideoMovie control the starting and stopping of a VCR during editing for accurate, synchronized editing at the touch of a single button.

On-screen display:
The viewfinder indications can also be displayed on the screen of a monitor or TV that's connected to the VideoMovie.

Quick review:
Permits reviewing of the final part of the last recorded segment in the Record-Pause mode.

R.A.Edit (Random Assemble Editing):
This feature lets you pre-select up to 8 scenes to be automatically rearranged and edited to a connected VCR.

Refresh:
A feature on the AC power adapter that lets you completely discharge the power from the battery pack before charging again. Contributes to longer battery life.

Retake:
Permits forward or reverse search in the Record-Pause mode for easy re-recording.

Self-timer:
Enables a VideoMovie to automatically start recording after a selected delay time so the operator can enter the picture before actual recording begins.

Time-lapse:
Permits automatic on/off sequential recording at preset intervals. Used to capture changes over long periods of time.

Tracking:
A mechanism enabling the tracking position to be adjusted during playback so that the heads can accurately pick up the recorded signal in the best condition.

Tally lamp:
Lights to show that recording is in progress.

VCR:
Short for Video Cassette Recorder.

White balance:
A term that refers to the correctness of color reproduction under various lighting. If the white balance is correct, all other colors will also be accurately reproduced.

CAUTIONS

For safety, strictly observe the following instructions.

- Do not open the VideoMovie's chassis.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not use the unit when there is lightning in the vicinity. Disconnect the power cable of connected equipment.

Avoid using the unit under the following conditions:

- Places subject to excessive humidity or dust.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
- Places subject to soot or steam such as near a cooking stove.
- Places subject to excessive shock or vibration.
- Near a television set (rolling pictures or howling might result).
- Extremely hot places.

Do not expose the unit to high temperatures over 40°C (104°F) for long periods.

If the unit should be subjected to direct sunlight, or left in a closed car in summer, or placed near a heater, the CCD and the auto-focus sensor may deteriorate and the cabinet may become deformed. Furthermore, this also may cause the transistors and other electronic and mechanical parts to malfunction. Remember the following:

- Do not leave the unit in places of over 50°C (122°F).
- Do not use the unit in places of over 40°C (104°F).
- Do not use the unit in places of below 0°C (32°F).
- Protect the unit from excessively dry or humid conditions (below 35% or above 80% humidity).
- For long storage, select a place between –20°C (–4°F) and 30°C (86°F).

Take special care for protection of the unit.

- Do not allow the unit to become wet.
- Do not leave the unit in closed cars on hot summer days.
- Take special care not to drop the unit or strike it against hard objects. Protect from shocks during transportation.

Make it a rule to observe the following instructions.

- Do not remove the battery pack or disconnect other power supply units while the power is on. If not observed, this will cause tape damage and missoperation.
- When the unit is not in use, remove the battery pack.

Keep the lens and viewfinder eyepiece always clean.

- When the lens is dirty or dusty, blow it off first and then gently wipe with a soft brush or lens cleaning paper.
- Mold may form if the lens is left dirty.

Be careful not to damage the CCD.

- Do not keep the lens directed at extremely bright objects such as the sun or other light sources for long periods. Although the CCD is less susceptible to such burn than a tube would be, caution should be exercised when using this unit. Most importantly, the lens should be capped except while actually shooting.
- Do not direct the eyepiece of the viewfinder at the sun.

Handle the unit carefully.

- Protect the microphone from excessive shocks.
- Do not carry the unit by holding it only by the viewfinder.

Moisture condensation.

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass's outer surface. This same phenomenon occurs on the head drum of a VideoMovie when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the VideoMovie itself.
- If moisture condensation occurs on the head drum, a condensation warning appears in the viewfinder and the unit enters the Stop mode, unable to function. In such a case, wait for a few hours until the indicator disappears.

Maintenance

- When the cabinet is dusty, clean by gently wiping with a soft cloth.
- Avoid the use of strong cleaning agents such as benzine or alcohol as they may damage the cabinet.
- Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

General Battery Precautions

- When the RM-V20U/C-P6U is not functioning even when correctly operated, the batteries are exhausted. Replace them with fresh batteries.
- Use only following batteries in the unit.
  RM-V20U..........................AAA (R03) size
  C-P6U..............................AA (R06) size

Please make note of the following rules for battery use. When misused, batteries can leak or explode.

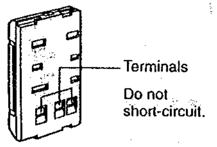
1. Insert the batteries correctly according to the diagram inside the battery section.
2. Do not use old and new batteries together.
3. Do not use two different kinds of batteries. Although sizes may be the same, voltages may differ.
4. Do not expose batteries to excessive heat as they can leak, or explode. Do not dispose of batteries in a fire.
5. Remove batteries from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

Notes on charging/discharging the battery pack

- Do not repeatedly recharge a battery pack without fully discharging it. Its service life will decrease. Use the REFRESH feature after every 5 charges.
- Even if a battery pack is fully charged, but is not used, it naturally discharges gradually. Be sure to recharge the battery pack just before using it, or the day before you intend to use it.
- This unit is normally warm during operation. Operate it in places having good ventilation. Do not allow it to discharge in a container, such as a bag, etc. Blocking the ventilation causes the temperature inside the unit to rise, possibly resulting in a damaged unit.
- If either recharging or discharging is stopped in the middle of the process, remove the battery pack before unplugging the AC cord.
- This unit incorporates an over-discharging protection circuit; however, immediately remove the battery pack from this unit after discharging has been completed to maintain the battery pack's capacity.
- If used near a radio, the Multi AC Charger/Adapter may interfere with reception.
- Be sure to connect the AC power cord and unplug the DC cord before charging or discharging the battery pack.
- Before storing the battery pack for a long period it is recommended to discharge it.
- The REFRESH feature will not function if the power status of a battery pack is discharged (No power remaining).
- With a just-purchased battery pack, or with a battery pack that has been stored for a long period, the CHARGE indicator may not light properly. In such a case, remove and reattach the battery pack again, then do the recharging procedure. The CHARGE indicator should light during recharging to indicate, the battery pack is normal. If this is not the result, consult your nearest JVC dealer.

A WORD ON THE EXCLUSIVE BATTERY PACKS

The battery packs are nickel-cadmium batteries and nickel-metal hydride batteries. Be sure to carefully read the caution attached to the battery pack.



Temperature ranges:

The recharging time is based on room temperature of 20°C.
The lower the temperature, the longer the recharging time.
For charging:10°C to 35°C(50°F to 95°F)
For operating:0°C to 40°C(32°F to 104°F)
For storing:–10°C to 30°C(14°F to 86°F)

IN CASE OF DIFFICULTY

What may initially appear to be trouble is not always a real problem. Make sure first.....

Symptoms	Check points
Power	
No power is supplied.	■ Is the battery pack correctly installed? ■ Is the battery pack charged? ■ Is the power supply unit correctly connected?
Recording	
Recording is impossible.	■ Check to see if the cassette safety tab is in place. ☞ P. 14.
Recording does not start.	■ Have you set the power switch to "REC" first?
Playback	
Tape is running, but no playback picture appears.	■ Is the TV receiver set to your video channel? ■ If A/V connection is used, is the TV's VIDEO/TV switch set to VIDEO? ■ Is the RF unit set to the correct channel?
Noise bars appear in the playback picture.	■ Use manual tracking function to reduce noise bars. (☞ P. 38.)
Playback picture is blurred or interrupted.	■ Video heads may be dirty or worn out. For head cleaning or replacement, consult the nearest JVC Service Dealer.
Tape transport	
Tape stops during fast forward or rewind.	■ Is the "M" indication visible in the viewfinder? If so, press COUNTER R/M to cancel the memory function.
Rewinding or fast forwarding is impossible.	■ Check to see if the tape has already been fully wound on one reel or the other.
Other	
Vertical white lines appear when shooting a very bright object.	■ This may occur when the background contrasts very much with the object. This is normal.
Crystal-shaped bright spots appear in the viewfinder.	■ Is the sun located in front or off to a slight angle from the front of the lens? Avoid letting sunlight directly into the lens by changing the VideoMovie's position, zooming in or out slightly, shading the lens with your hand, etc.
Picture is blurred in the Quick Review or Retake mode.	■ Is SP/EP properly set?
Error number (E01, etc.) appears in the viewfinder.	■ Consult your nearest JVC Service dealer.

The VideoMovie is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, Multi AC Charger/Adapter, etc.) and clock battery; and then reconnect it and proceed as usual from the beginning.

Special note on head cleaning
Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Although this VideoMovie is equipped with a built-in head cleaner which automatically cleans the heads, reducing the likelihood of dirty heads, if such troubles are encountered, please consult your nearest JVC dealer.

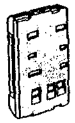
- ■ A built-in head cleaner automatically cleans the video heads and head drum whenever a cassette is loaded and unloaded to reduce head clogging.

Symptoms	Check points
White dots appear in the viewfinder when using Slow Shutter mode.	■ Set the power switch to "OFF" for a while to cool down the VideoMovie.
The screen becomes almost white.	■ Are you using "Slow Shutter 3" in a well-lit location? If so, press P.AE/EFFECT and select OFF. (☞ P. 23)
The screen flickers.	■ That may happen when using Sports mode (☞ P. 30) in a place lit by fluorescent or mercury-vapor lights.
Digital zoom is not effective.	■ Have you set the zoom magnification to x10 in the menu? — Select x20. (☞ P. 27.) ■ Digital zoom cannot be used along with Video Echo mode. (☞ P. 30.)
Picture wipe is impossible.	■ Has a picture been stored in memory? — Select the picture wipe mode, and then shoot a scene first. When you stop recording, the last scene is automatically stored in memory. ■ Have you turned the VideoMovie OFF while there was a scene in the VideoMovie's picture memory? ■ Is the power supply disconnected? (If the Record Pause mode continues for longer than approx. 5 minutes, the unit switches itself off automatically to save power.) ■ Have you changed the effect mode while there was a scene in the picture memory? (☞ P. 23.) ■ With the shooting mode selector set to VARIABLE PRESET, have you replaced some effects in the effect menu? (☞ P. 28.) ■ Have you changed the fade/wipe mode when the picture memory is retained? (☞ P. 24.) ■ Have you done Retake, Fast Forward or Rewind? — These operations erase the picture memory.
Some indicators blink in the viewfinder.	■ Some effects, fade/wipe modes and D.I.Stabilizer cannot be used together. If such a combination is selected, the indicators blink.
Condensation warning (▣) appears in the viewfinder.	■ The tape is sticking to the head drum, causing recording and playback to a halt. Turn off the unit, and leave it for a few hours. Then set the power switch to "REC" or "PLAY". A few minutes later, the warning should disappear.
Head clog warning (⊗) appears in the viewfinder.	■ In spite of the auto head cleaning function (☞ P. 52), video heads have become clogged. Use JVC cleaning cassette TCC-2U (optional) or consult your nearest JVC Service dealer.

SYSTEMS FLEXIBILITY

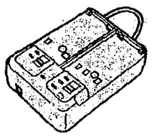
For maximum enjoyment, make the most of the provided or optional accessories depending on the situation.

- **Battery pack**
  BN-V12U
  BN-V22U
  BN-V50U
  BN-V60U



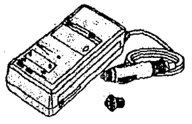
*Recording time
☞ P. 10

- **Multi AC Charger/Adapter AA-V35U**
  Charges or discharges battery pack or powers the VideoMovie via household AC current. (Can be used with 110 V to 240 V.)



*Charging time ☞ P. 11

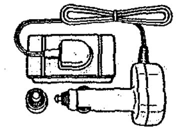
- **Car battery charger BH-V3U**☆
  Charges battery pack or powers the VideoMovie via a car battery. (Use with 12 V or 24 V nagative grounded cars only.)



*Charging time

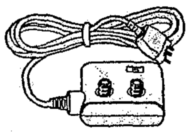
BN-V12U	Approx. 50 min.
BN-V22U	Approx. 90 min.
BN-V60U	Approx. 90 min.

- **Car battery cord AP-V7U**
  Power the VideoMovie via a car battery. (Use with 12 V negative grounded cars only.)



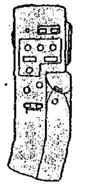
*Cable length: 2 m (6.6 ft.)

- ***RF unit RF-V5U***
  Use to connect the VideoMovie to a regular television for playback.



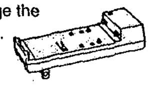
*Cable length: 1.5 m (5 ft.)

- **Wired remote control unit RM-V20U**
  Controls VideoMovie's functions (POWER ON/OFF, REW, FF, STOP, PLAY, PAUSE, INSERT, AUDIO DUB, REC TIME, INTERVAL, VISS, START/STOP, ZOOM T/W) from a distance, and from any direction.



*Cable length: 3 m (9.9 ft.)

- **Battery charger BH-VC10U**☆
  Use to charge the battery pack.

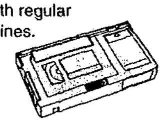


*Charging time

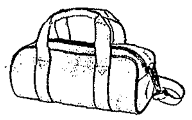
BN-V12U	Approx. 7 hours
BN-V22U	Approx. 13 hours
BN-V60U	Approx. 13 hours

- **Compact VHS (VHS-C) *cassettes* ST-C30/C20**
  Allows 30/20 minutes of VHS *recording and* playback respectively.

- **Cassette adapter (VHS Playpak) C-P6U**
  Enables the VHS-C cassette to be used with regular VHS machines.



- **Active carrying bag CB-V7U**

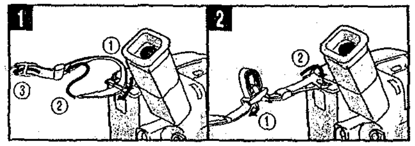


*Dimensions (WxHxD):
340 x 170 x 155 mm
(13-7/16" x 6-3/4" x 6-1/8")

☆The BN-V50U battery pack is not rechargeable with the BH-V3U and the BH-VC10U.

Some accessories are not available in some areas.

ATTACHING THE SHOULDER STRAP



1 Loop the end of the strap over the top of the eyelet ①, then, folding it back, thread the end of the strap first through the keeper ②, then the buckle ③. Making sure that the strap is not twisted, repeat the above procedure to attach the other end of the strap to the other eyelet.

2 Adjust the shoulder strap to the desired length ①, then slide both keepers up snug against the eyelets to prevent the strap from slipping ②.

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSY	C1	(S1) *SPRING *PUSH BUTTON *CONNECTOR Ⓐ .Ⓒ	<NOTE1> <NOTE2>
②	TOP COVER	C2	2 (S2)	<NOTE 3>
③	REAR COVER ASSY	C3	9(S2),(S3)	<NOTE 4>

① ② ③ ④ ⑤

① : Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These nubers are also used as the identification (location) No. of parts Figures.

② : Part to be removed or installed.

③ : Fig. No. showing Procedure or Part Location.

C = Cabinet
CA = Camera
D = Deck

④ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
2(S1) = 2 Screws (S1)

⑤ : Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

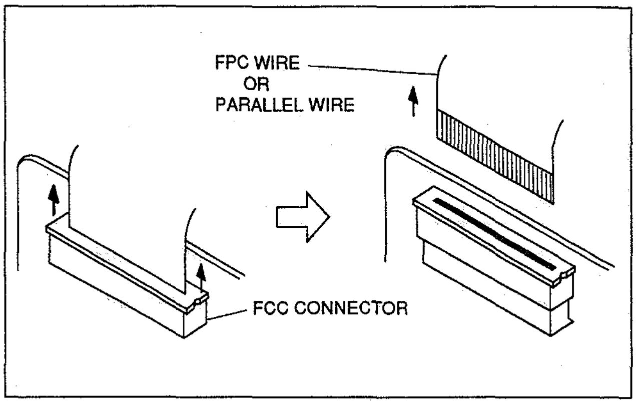


Fig. 1 TYPE A

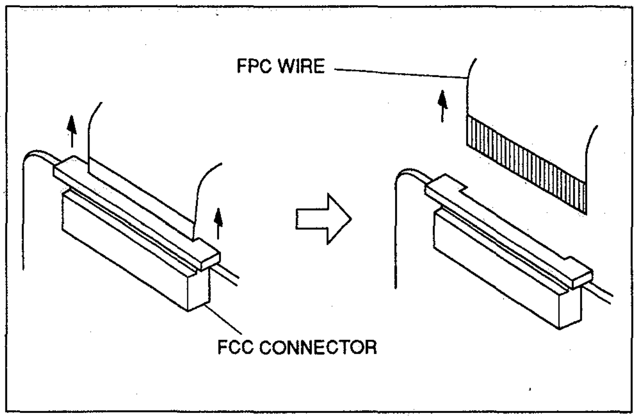


Fig. 2 TYPE B

2. Depress the connector structure downward to release the clamp when removing or inserting the flat wire cable, as indicated below.

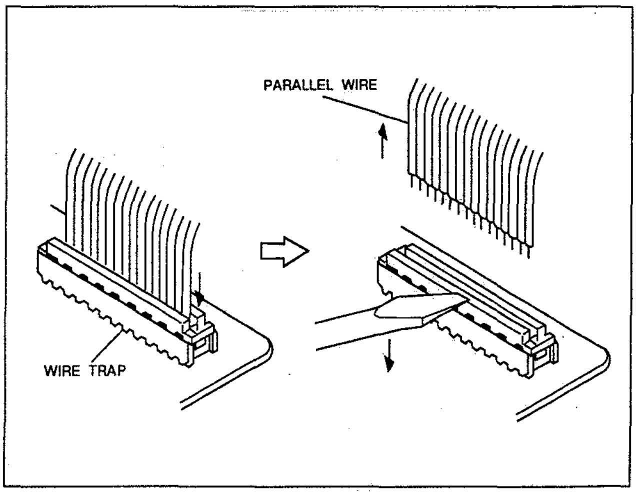


Fig. 3

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

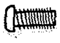
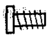
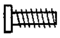
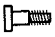
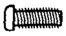
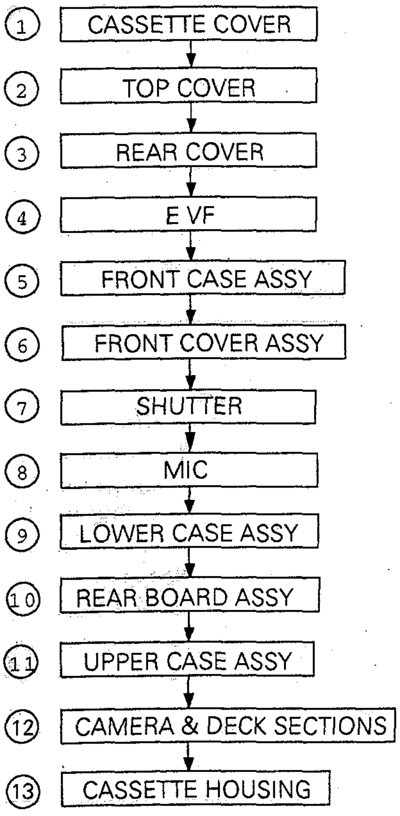
SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		YQM30032-3-2
S2		YQM30032-2-2
S3		YQM30032-1-2
S4		YQM30032-4-2
S5		YQM30032-40
S6		YQM30060
S7		SPSH1725M
S8		SSSH1730M
S9		SPSP2060ZY

Table 1-1-1

1.2 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.2.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① CASSETTE COVER
② TOP COVER
③ REAR COVER
④ E VF
⑤ FRONT CASE ASSY
⑥ FRONT COVER ASSY
⑦ SHUTTER
⑧ MIC
⑨ LOWER CASE ASSY
⑩ REAR BOARD ASSY
⑪ UPPER CASE ASSY
⑫ CAMERA & DECK SECTIONS
⑬ CASSETTE HOUSING

1.2.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER	C1	(S1) *SPRING *PUSH BUTTON *CONNECTORSⒶ-Ⓒ	<NOTE 1> <NOTE 2>
②	TOP COVER	C2	2(S2)	<NOTE 3>
③	REAR COVER ASSY	C3	8(S2),(S3)	<NOTE 4>
④	E VF	C4	*CONNECTORⒹ	<NOTE 2> <NOTE 5>
⑤	FRONT CASE ASSY	C5	4(S2),2(S4) *CAP *CONNECTOR Ⓔ	<NOTE 2>
⑥	FRONT COVER ASSY	C6	2(S2)	–
⑦	SHUTTER	C6	3(S5)	–
⑧	MIC	C6	2(S2)	–
⑨	LOWER CASE ASSY	C7	6(S2),2(S3),(S4)	<NOTE 6>
⑩	REAR BOARD ASSY	C8	2(S2) *CONNECTORS Ⓕ-Ⓙ	<NOTE 2>
⑪	UPPER CASE ASSY	C8	7(S2),(S3) *CONNECTORS Ⓚ,Ⓛ	<NOTE 2>
⑫	CAMERA & DECK SECTIONS	C9	2(S4),(S6),(S7) *CONNECTORS Ⓜ, Ⓝ	<NOTE 2>
⑬	CASSETTE HOUSING	C10	4(S8)	<NOTE 7>

List of Abbreviations:
4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)

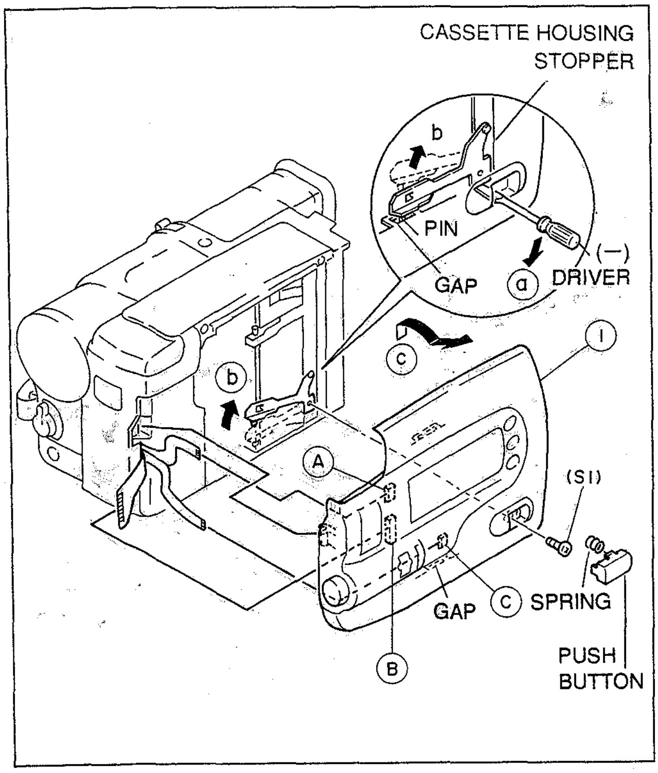

CASSETTE HOUSING STOPPER
b
PIN
GAP
a
(−) DRIVER
c
1
b
A
(S1)
GAP
C
SPRING
B
PUSH BUTTON

Fig. C1

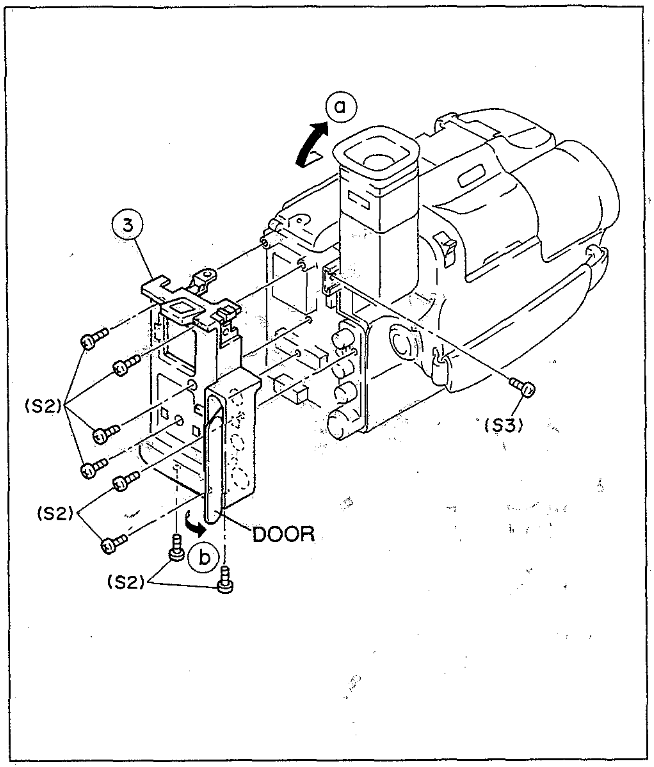

a
3
(S2)
(S3)
(S2)
DOOR
b
(S2)

Fig. C3

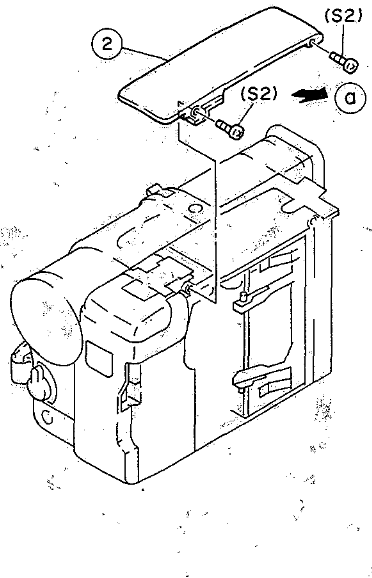


Fig. C2

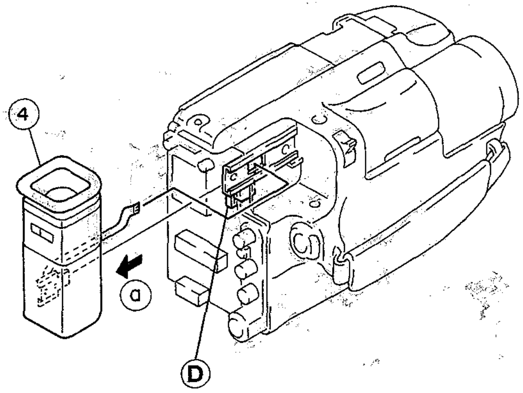


Fig. C4

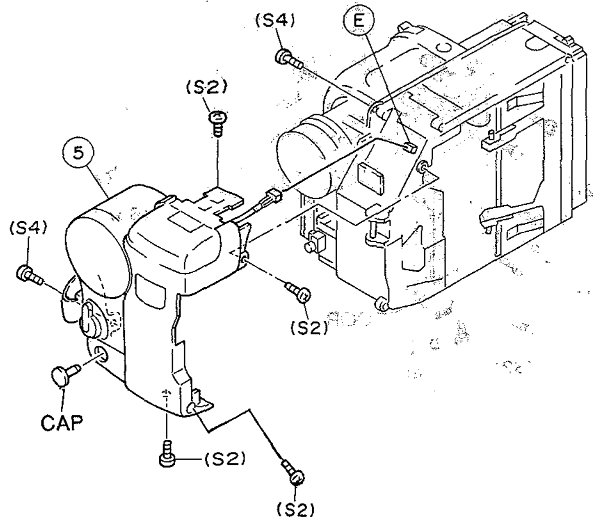

(S4)
E
(S2)
5
(S4)
(S2)
CAP
(S2)
(S2)

Fig. C5

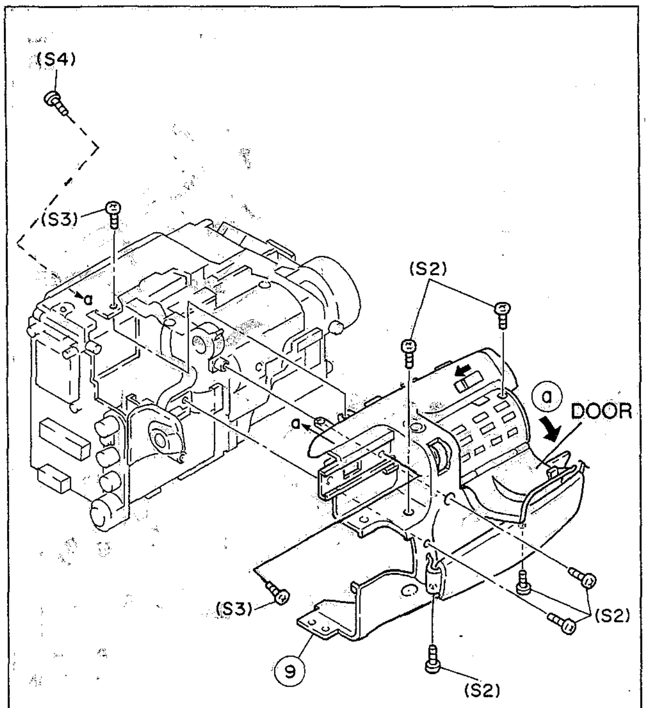

(S4)
(S3)
a
(S2)
a
a
DOOR
(S3)
(S2)
9
(S2)

Fig. C7

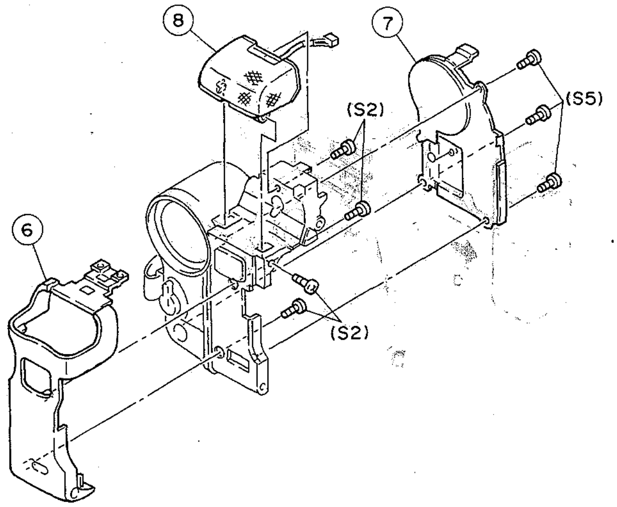


Fig. C6

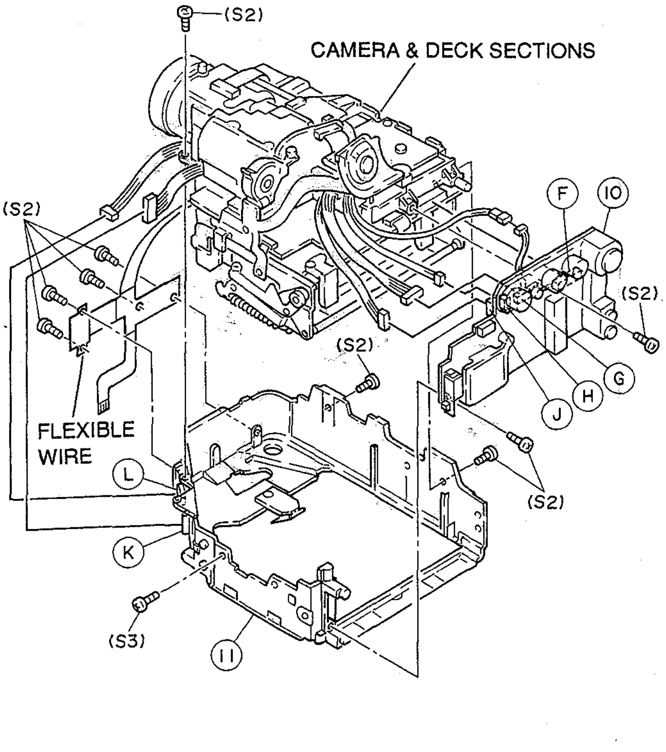

(S2)
CAMERA & DECK SECTIONS
(S2)
F
10
(S2)
(S2)
G
FLEXIBLE WIRE
H
J
L
(S2)
K
(S3)
11

Fig. C8

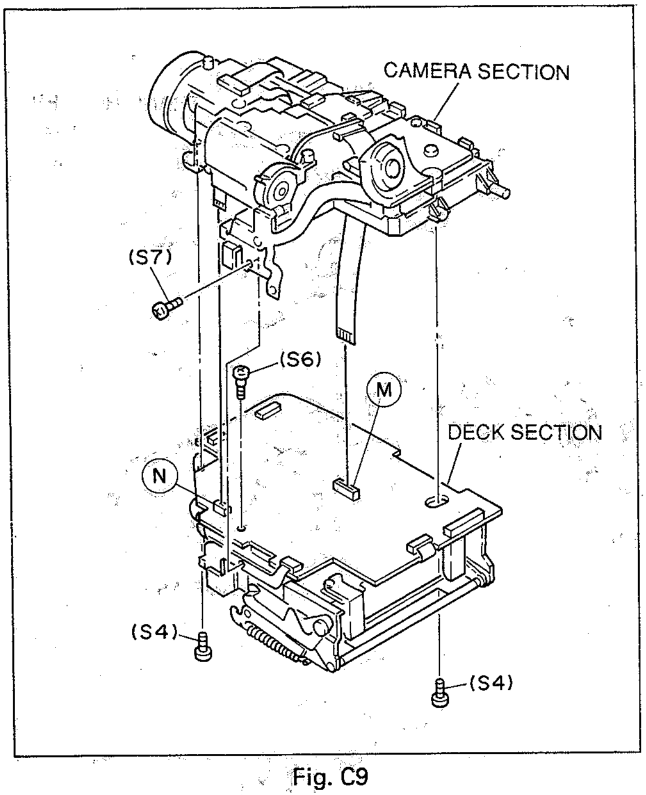
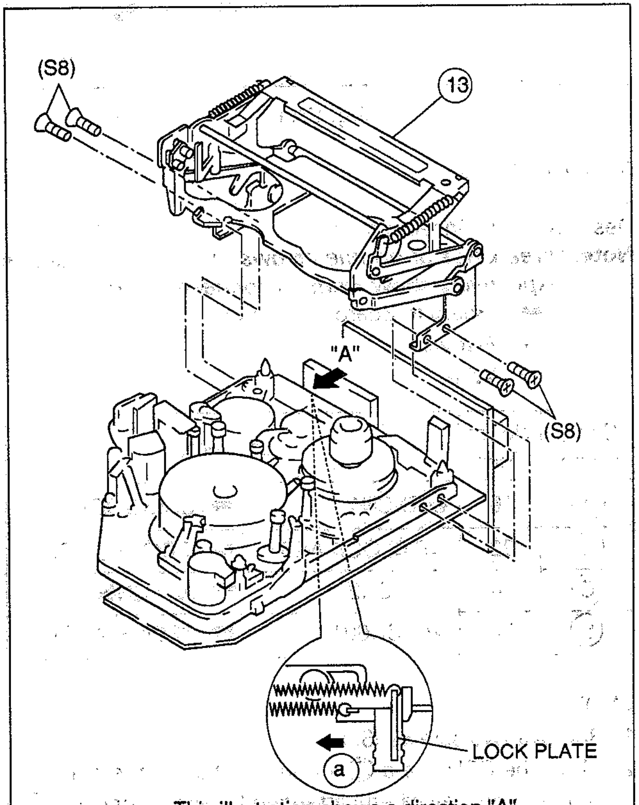


Fig. C9



This illustration shows a direction "A".

Fig. C10

<NOTE 1>
1.Pull out the push button and spring.
2.Remove one screw(S1).
3.Normally, press the eject button and eject the cassette cover,remove the cassette housing stopper with the fingers at the reverse side of cover. If unit is detected of some electrical system and it cannot be eject by pressing the eject button, insert a (-) driver from hole of push button and push it in the direction of the arrow ⓐ . Then lite up the pin of cassette housing stopper in the direction of the arrow ⓑ and release it out of gap on the cassette cover.
4.Lift up ① in direction of right ward and remove it in the direction of the arrow ⓒ .
5.Remove three flat wire of connectors Ⓐ , Ⓑ and Ⓒ .

<NOTE 2>
Destination of connectors
Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*
⬌: Board to Board Connector
⇔: Flat wire
↔: Wire

Connector	No. of Pins	Connector
Ⓐ	18	CAMERA OPERATION CN1 ⇔ MAIN CN7
Ⓑ	30	CAMERA OPERATION CN2 ⇔ MAIN CN15
Ⓒ	3	CAMERA OPERATION CN3 ⇔ TRANS CN202
Ⓓ	7	E VF ⇔ REAR/EL CN3
Ⓔ	3	MIC ↔ MIC AMP CN1
Ⓕ	48	REAR/EL CN1 ⬌ MAIN CN2
Ⓖ	9	REAR/EL CN2 ↔ PROCESS CN1
Ⓗ	2	REAR/EL CN6 ↔ TRANS CN201
Ⓙ	5	REAR/EL CN5 ↔ CCD CN3
Ⓚ	8	MIC AMP CN3 ↔ MAIN CN12
Ⓛ	4	MIC AMP CN2 ↔ JACK CN1
Ⓜ	16	PROCESS CN4 ⇔ MAIN CN3
Ⓝ	12	OPERATION UNIT ⇔ MAIN CN6

<NOTE 3>
1.Remove two screws (S2).
2.Lift up ② and remove it in the direction of the arrow ⓐ .

<NOTE 4>
1.Stand up E VF while pull it forward in the direction of the arrow ⓐ .
2.Open the door of RCA jack in the direction of the arrow ⓑ . Remove eight screws (S2) and one screw (S3), remove ③ .

<NOTE 5>
Disconnect connector Ⓓ , remove ④ in the direction of the arrow ⓐ .

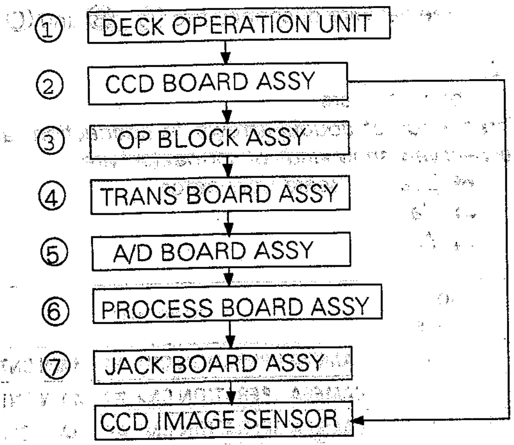
<NOTE 6>
1.Open the door of operation keys in the direction of the arrow ⓐ .
2.Remove six screws (S2), two screw (S3) and one screw (S4), remove ⑨ .

<NOTE 7>
1.After detaching the cassette cover, top cover, rear cover, E VF, front case, rear board and upper case, move the lock plate in the direction of the arrow ⓐ to set the cassette housing to the EJECT mode.
2.Remove four screws (S8) and remove ⑬ .

1.3 DISASSEMBLY/ASSEMBLY OF CAMERA PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the CAMERA parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.



① DECK OPERATION UNIT
② CCD BOARD ASSY
③ OP BLOCK ASSY
④ TRANS BOARD ASSY
⑤ A/D BOARD ASSY
⑥ PROCESS BOARD ASSY
⑦ JACK BOARD ASSY
CCD IMAGE SENSOR

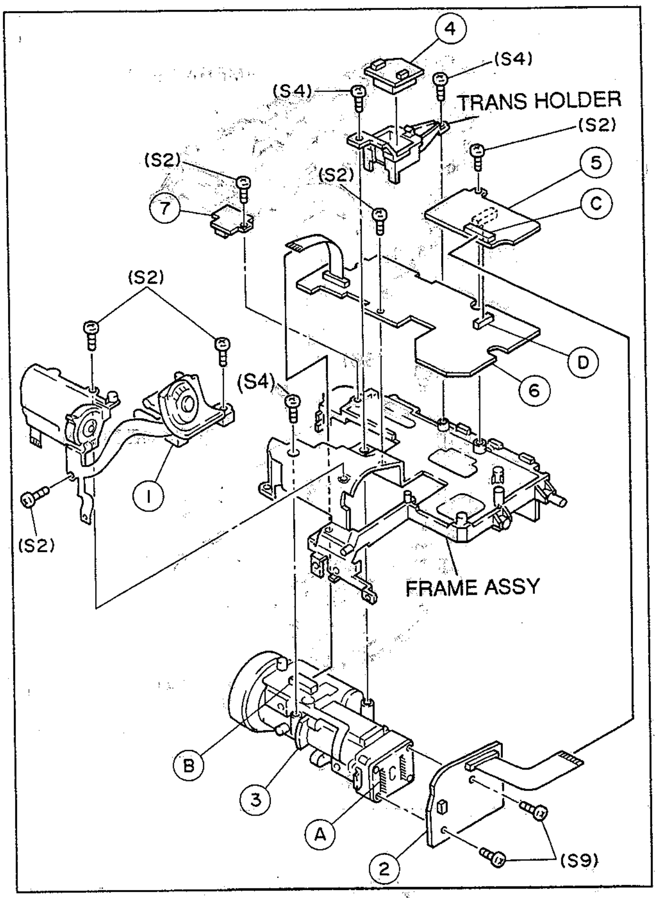
*Refer to section 1.8

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	DECK OPERATION UNIT	CA1	3(S2)	–
②	CCD BOARD ASSY	CA1	2(S9) *CONNECTOR Ⓐ	<NOTE 1> <NOTE 2>
③	OP BLOCK ASSY	CA1	2(S4) FRAME ASSY *CONNECTOR Ⓑ	<NOTE 1>
④	TRANS BOARD ASSY	CA1	(S4) TRANS HOLDER	<NOTE 3>
⑤	A/D BOARD ASSY	CA1	(S2) *CONNECTOR Ⓒ	<NOTE 1>
⑥	PROCESS BOARD ASSY	CA1	(S2) *CONNECTOR Ⓓ	<NOTE 1>
⑦	JACK BOARD ASSY	CA1	(S2)	–

List of Abbreviations:

4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)



4
(S4)
(S4)
TRANS HOLDER
(S2)
(S2)
(S2)
5
C
7
(S2)
D
6
(S4)
1
(S2)
FRAME ASSY
B
3
A
2
(S9)

Fig. CA1

Reference Notes:

<NOTE 1>

Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Connector	No. of Pins	Connector		
Ⓐ	16	CCD CN1	⬌	CCD SOCKET
Ⓑ	22	OP BLOCK ASSY	⇔	PROCESS CN3
Ⓒ	24	CCD CN2	⇔	A/D CN501
Ⓓ	30	A/D CN601	⬌	PROCESS CN2

<NOTE 2>

1. Remove two screws (S9).
2. Move the CCD board ② in the direction of the rear side. At that time, pay careful attention to pins (connector Ⓐ) of the CCD image sensor so as not to damage them.

<NOTE 3>

Trans board assembly is generated a hight voltage. To prevent electric shock, do not touch to trans board assembly directly.

1.4 DISASSEMBLY/ASSEMBLY OF DECK PARTS

1.4.1 Disassembly flow chart

This flowchart indicates the disassembly step for the DECK parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.

① MAIN BOARD ASSY
↓
② MIC AMP BOARD ASSY
↓
③ SENSOR BOARD ASSY

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	MAIN BOARD ASSY	D1	(S6), (S7) *CONNECTORS Ⓐ-Ⓔ	<NOTE 1>
②	MIC AMP BOARD ASSY	D2	(S2)	-
③	SENSOR BOARD ASSY	D3	4(S7) *CONNECTORS Ⓕ, Ⓖ	<NOTE 1> <NOTE 2>

List of Abbreviations:
4(S1) = 4 Screws (S1)
3(L1) = 3 Locking Tabs (L1)
3(SD1) = 3 Solder position (SD1)
3(K1) = 3 Positioning pins (K1)
2(P1) = 2 Springs (P1)
2(W1) = 2 Washers (W1)

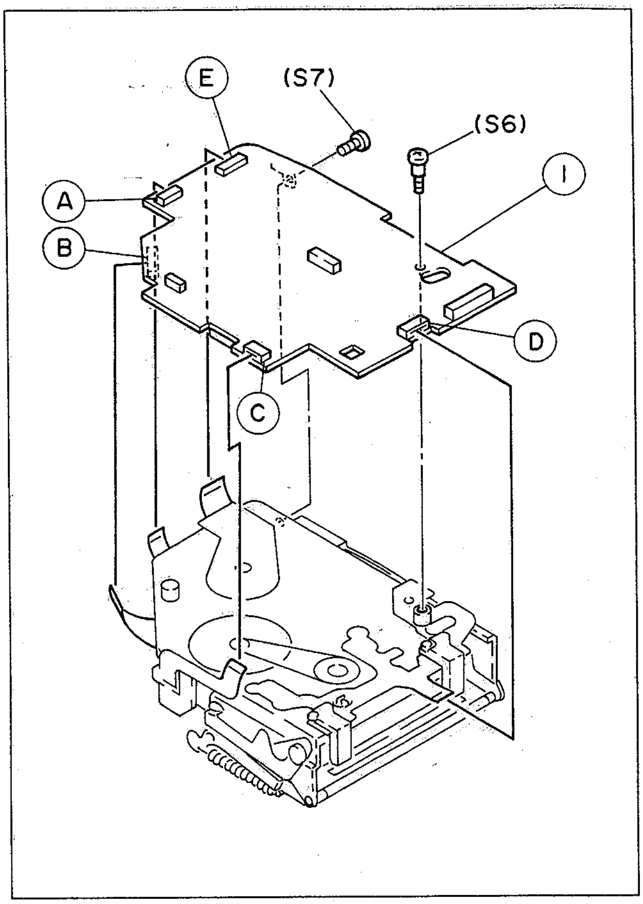


Fig. D1

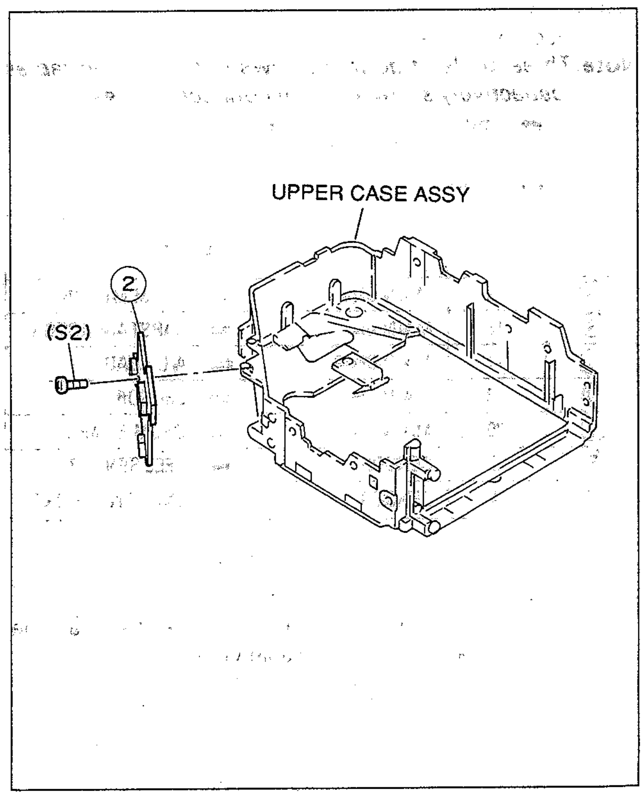


Fig. D2

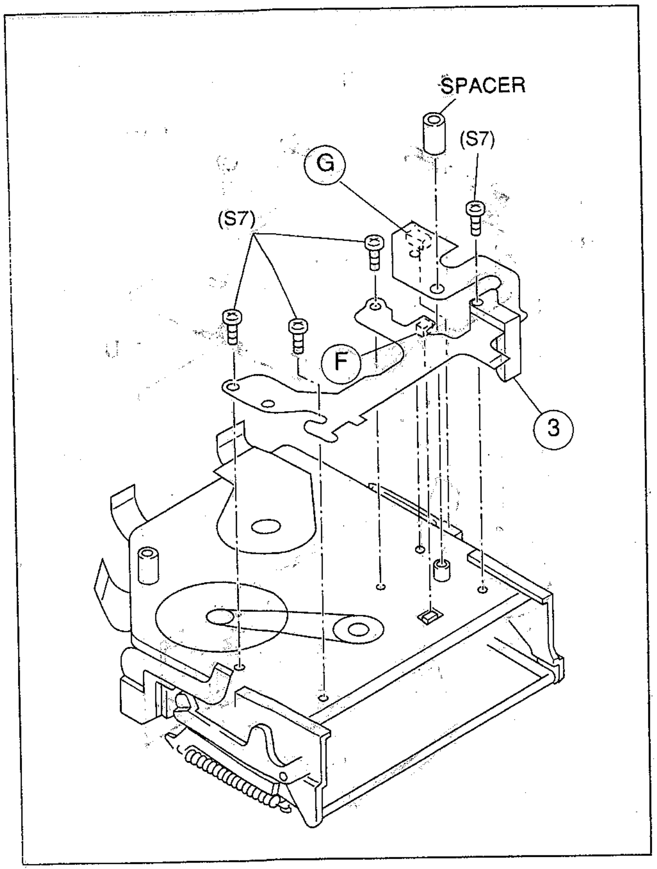


Fig. D3

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector		
Ⓐ	18	MAIN CN4	⇔	DRUM MOTOR
Ⓑ	18	MAIN CN5	⇔	CAPSTAN MOTOR
Ⓒ	11	MAIN CN10	⇔	A/C HEAD
Ⓓ	13	MAIN CN13	⇔	SENSOR
Ⓔ	20	MAIN CN1	⇔	DRUM BOARD
Ⓕ	3	SENSOR	⬌	REEL SENSOR
Ⓖ	4	SENSOR	↔	END SENSOR BKT

<NOTE 2>
When disconnecting, do it very carefully since the other side connector Ⓕ is attached to a flexible wire.

1.5 EXTENSION CABLE CONNECTION

Connector	Pins	Connection			Part Number
①	20	MAIN CN1	←→	DRUM BOARD	YTU94077-20 YTU94074-20
②	22	OP BLOCK ASSY	←→	PROCESS CN3	YTU94077-22
③	30	A/D CN601	←→	PROCESS CN2	PEMCJ0988-030
④	5	CCD CN3	←→	REAR/EL CN5	YUJ40095A-5
⑤	9	PROCESS CN1	←→	REAR/EL CN2	YUJ40095A-9
⑥	7	REAR/EN CN3	←→	E VF	YTU94077-7 YTU94074-7
⑦	30	MAIN CN15	←→	CAMERA OPERATION CN2	YTU94077-30 YTU94074-30
⑧	13	MAIN CN13	←→	SENSOR	YTU94077-13 YTU94074-13
⑨	11	MAIN CN10	←→	A/C HEAD	YTU94077-11 YTU94074-11
⑩	12	MAIN CN6	←→	DECK OPERATION UNIT	YTU94077-12 YTU94074-12
⑪	18	MAIN CN-7 MAIN CN4 MAIN CN5	←→ ←→ ←→	CAMERA OPERATION CN1 DRUM MOTOR CAPSTAN MOTOR	YTU94077-18 YTU94074-18
⑫	16	MAIN CN3	←→	PROCESS CN4	YTU94077-16
⑬	48	MAIN CN2	←→	REAR/EL CN1	PEMCJ0987-048

NOTE: All cable are used in YTU93074A CABLE KIT.

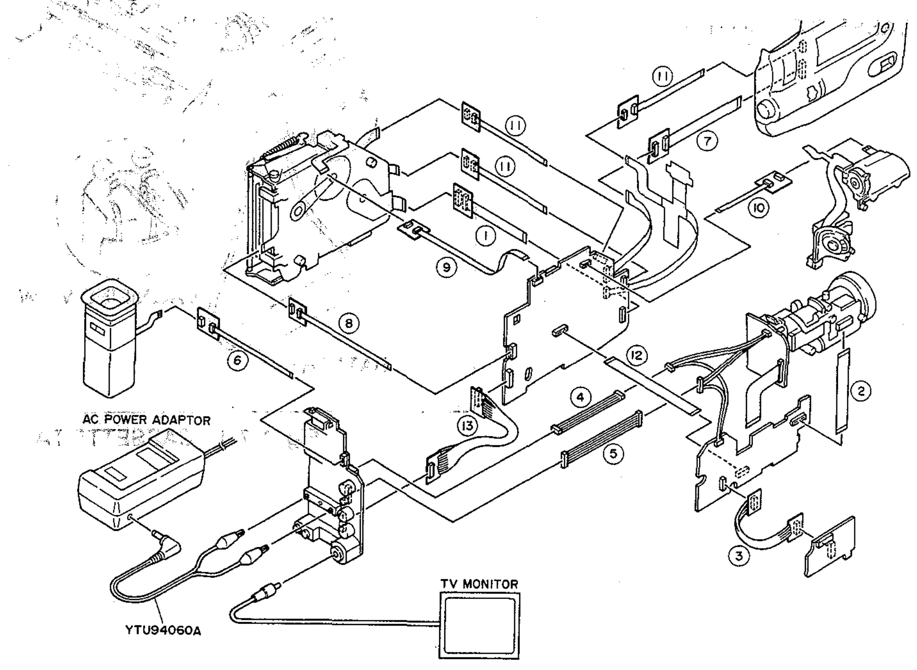
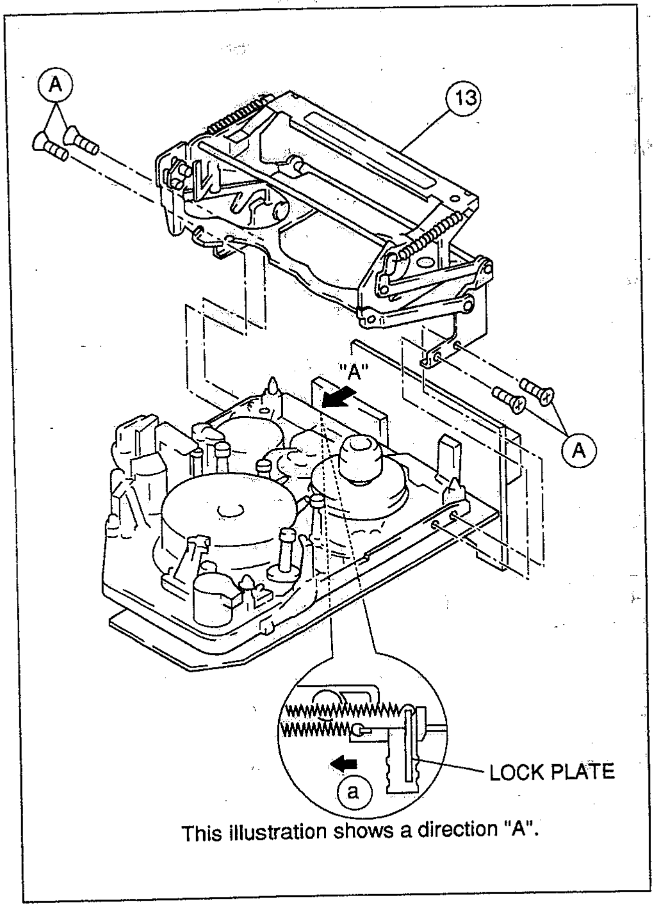


Fig. 1-5-1 EXTENSION CABLE CONNECTION

1.6 REPLACEMENT OF CASSETTE HOUSING

1. After detaching the cassette cover, top cover, rear cover, E VF, front case, rear board and upper case, move the lock plate in the direction of the arrow ⓐ to set the cassette housing to the EJECT mode.
2. Remove four screws Ⓐ.
3. Move the cassette housing ⑬.



This illustration shows a direction "A".

Fig. 1-6-1 CASSETTE HOUSING

1.7 TO TAKE OUT CASSETTE TAPE

When the deck enters the Emergency mode with cassette tape loaded and it cannot be ejected by pressing the EJECT button, take out of the cassette housing according to the following procedure.

1. Disconnect the deck from the power source and remove the cassette cover, rear cover, operation unit and upper case.
2. Remove wires of the mode control motor as shown in the magnified view Ⓐ and connect jumping wires to the terminals.
3. Holding the cassette housing by hand, connect the jumping wires to battery and set the mechanism for unloading as it is in the Eject mode. In the condition, turn the take-up gear (see the magnified view Ⓑ) in the direction of the arrow ⓐ (toward the drum) to wind the tape. Checking up whether the tape is damaged or not, stop holding of the cassette housing by hand.

Note: *If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.*

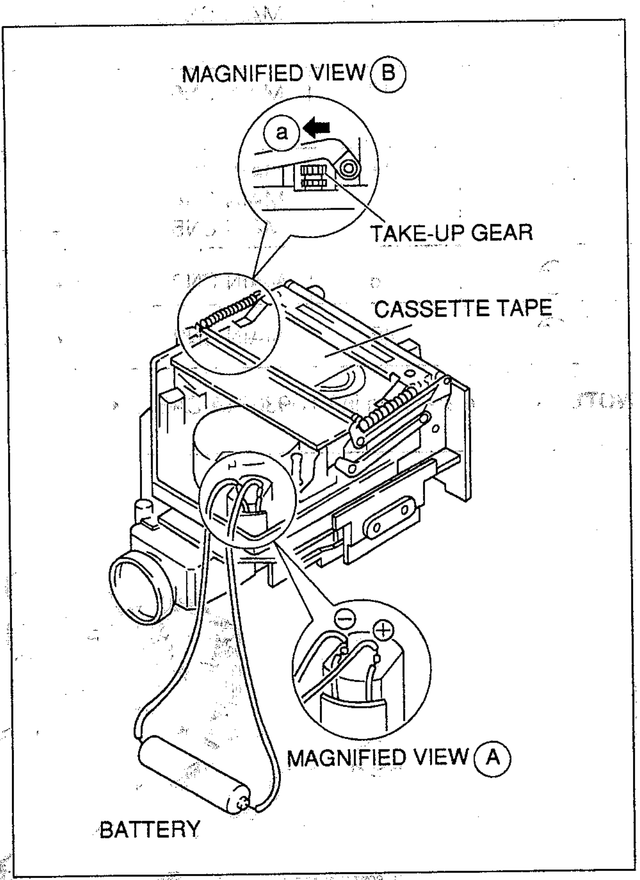


Fig. 1-7-1 CASSETTE TAPE

1.8 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.8.1 Removal of CCD image sensor

1. Remove two screws Ⓐ securing the CCD base, and disassemble the optical LPF holder, the optical LPF, spacer rubber, and CCD image sensor from the CCD base.

1.8.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the spacer rubber, optical filter, filter holder on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-7-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ.
Spacer rubber	IC side is horizontal.
Optical LPF	Marks are on the left and bottom viewed as indicated by the arrow ⓐ

2. Then, place the imager holder on the top of the optical LPF holder.
3. Fix the CCD base to OP block with the two screws Ⓐ. At that time, be careful of the orientation.
4. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

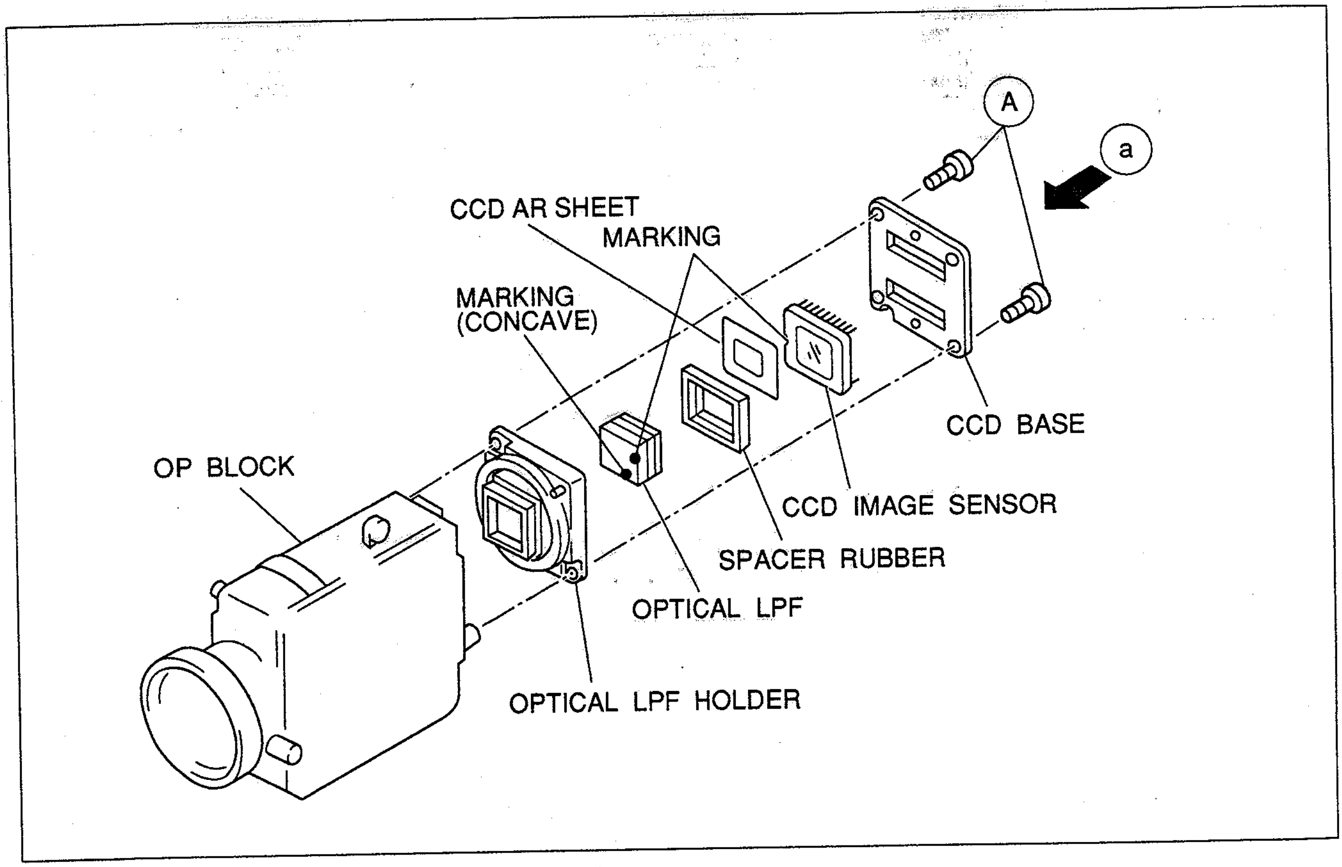


Fig. 1-8-1 CCD IMAGE SENSOR

1.9 HEAT BONDED FLEXIBLE CABLE SERVICE

Replacement of the heat bonded flexible cable used in the camera section of this model is described below.

1.9.1 Removal

1. Grasp the end of the flexible cable and, without heating, gently and carefully peel it from the circuit board so as not to leave residual bonding agent.

Note: *Inspect the cable for shorting, faulty connections, open connections and other defects. If defective, replace the cable.*

1.9.2 Installation

1. Evenly melt solder on the circuit board pattern and apply flux (leave a small amount of solder).
2. Peel off the white seal of the new cable. Align the cable pattern with the board pattern with 1 mm of the board pattern protruding beyond the cable (see Fig. 1-9-1).

Note: *As some adhesive remains from the seal, gently press the end of the cable so that it adheres to the pattern.*

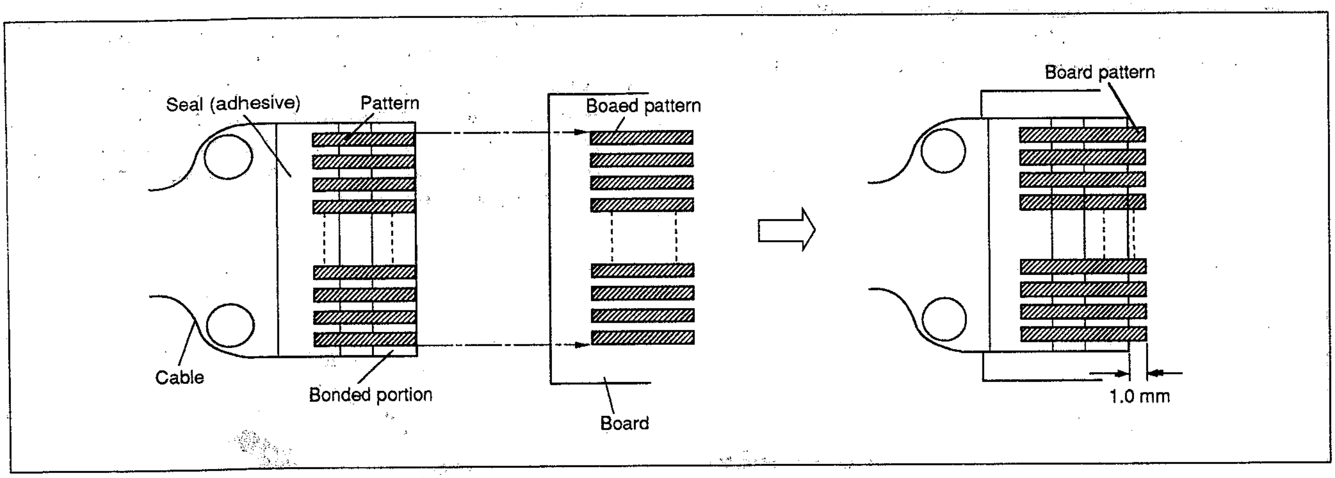

Seal (adhesive)
Pattern
Boaed pattern
Board pattern
Cable
Bonded portion
Board
1.0 mm

Fig. 1-9-1 Align the cable and board patterns

3. As shown in Fig. 1-9-2, restrain the cable pattern with a screwdriver and melt the solder remaining on the board pattern with a soldering iron.

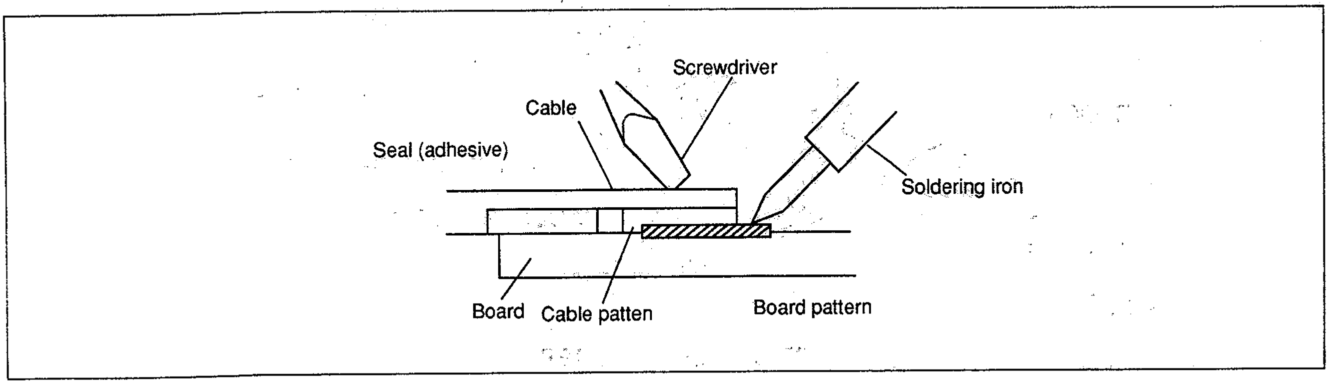

Screwdriver
Cable
Seal (adhesive)
Soldering iron
Board
Cable patten
Board pattern

Fig. 1-9-2 Soldering

4. After soldering, check conductivity with an ohmmeter and inspect for shorting.

1.9.3 Reinforcing

1. As shown in Fig. 1-9-3, use a soldering temperature of about 260°C (400°C will damage the cable) and heat the adhesive section of the cable from center outwards. Pause at each pin for 2 or 3 seconds.
   Perform 1 – 3 times.

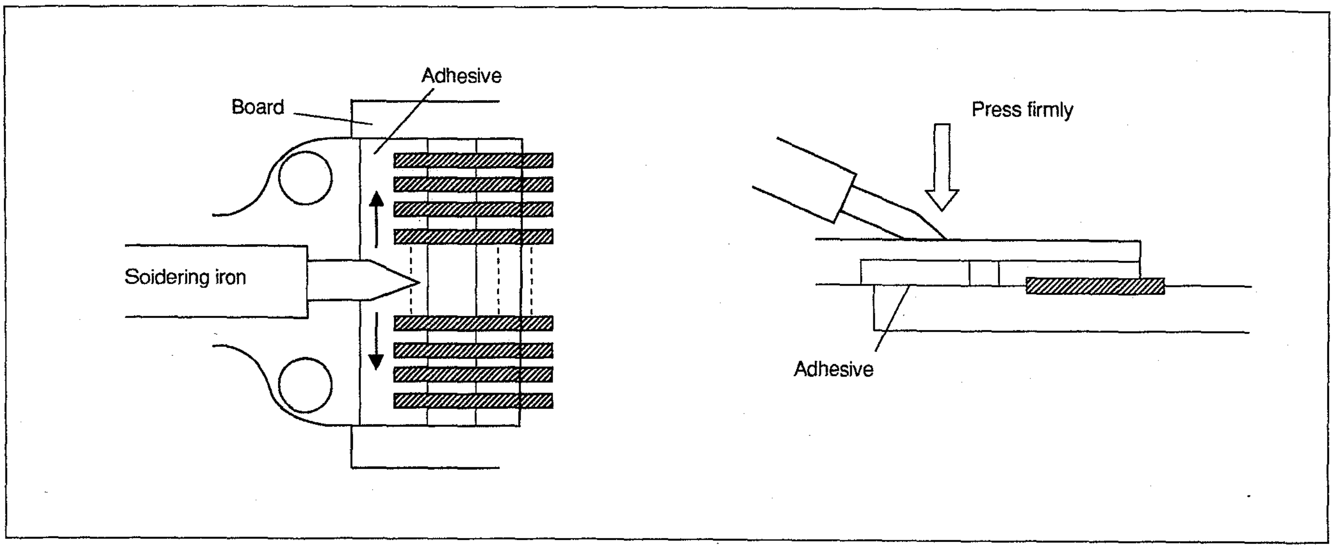

Adhesive
Board
Soidering iron
Press firmly
Adhesive

Fig. 1-9-3 Reinforcing

2. Inspect the cable for damage and secure connection.
3. Allow to cool. Do not subject to stress while cooling.

SECTION 2
MECHANISM ADJUSTMENT

2.1 SERVICE CAUTIONS

2.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. When installing parts, be careful not to do with other parts as well as not to damage others. (Pay the most careful attention to the upper drum assy and tape transport mechanism.)

2.1.2 How to read the disassembly and assembly (For Mechanism Parts)

① : Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

② : Starting No. followed by corresponding part which can be removed at this stage.
See example below.

Example:
SUPPLY REEL DISK ASSY can be removed without removing any other parts.
But BAND ARM ASSY can be removed only after removing SUPPLY REEL DISK ASSY (No. 1).

③ : Part to be removed or installed.

④ : Location of part.
T = Top
B = Bottm

⑤ : Fig. No. showing Procedure or Part Location.
M = Mechanism

⑥ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

⑦ : Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.1.3 Main screws and washers to deal with disassembly/assembly

Table 2-1-1 lists screws and washers by their symbols which correspond to those shown in figures of this section "Disassemby and Assembly".

SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		SPSH1735M
S2		YDM4093
S3		SPSH1725M
S4		SPSH1425M
S5		YQM30032-21
S6		SPSK1720M
S7		SPSH1760M
S8		SSSH1730M
S9		YQ42886
S10		SPSH1710M
S11		YQ42931
S12		SPSN1740
S13		SPSH1730M

SYMBOL OF SCREW	SHAPE	PART NUMBER
W1		PQM30017-27
W2		Q03093-835
W3		PQM30017-25
W4		YQ41904

Table 2-1-1

(For Mechanism Parts)

STEP /LOC. No.	START -ING No.	PART		Fig. No.	REMOVAL *UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	INSTALLATION ADJUSTMENT CONDITION NOTE
①	1	SUPPLY REEL DISK ASSY	T	M1	(W1)	<NOTE 3>
②	1	BAND ARM ASSY	T	M1	(W2), (P1), *(L1)	—
③	1	BAND REEL ASSY	T	M1	(W2)	—
④	1	CAM SWITCH ASSY	T	M1	*2(L2)	See, Adjustment procedure for Section 2.4 <NOTE 4>
⑤	1-5	TENSION ARM ASSY	T	M2	(W1)	<NOTE 3>
⑥	6	END SENSOR BKT ASSY	T	M2	—	—
⑦	7	CASSETTE BLOCK	T	M3	(S13)	—
①	②	③	④	⑤	⑥	⑦

2.2 DISASSEMBLY/ASSEMBLY OF MECHANISM PARTS

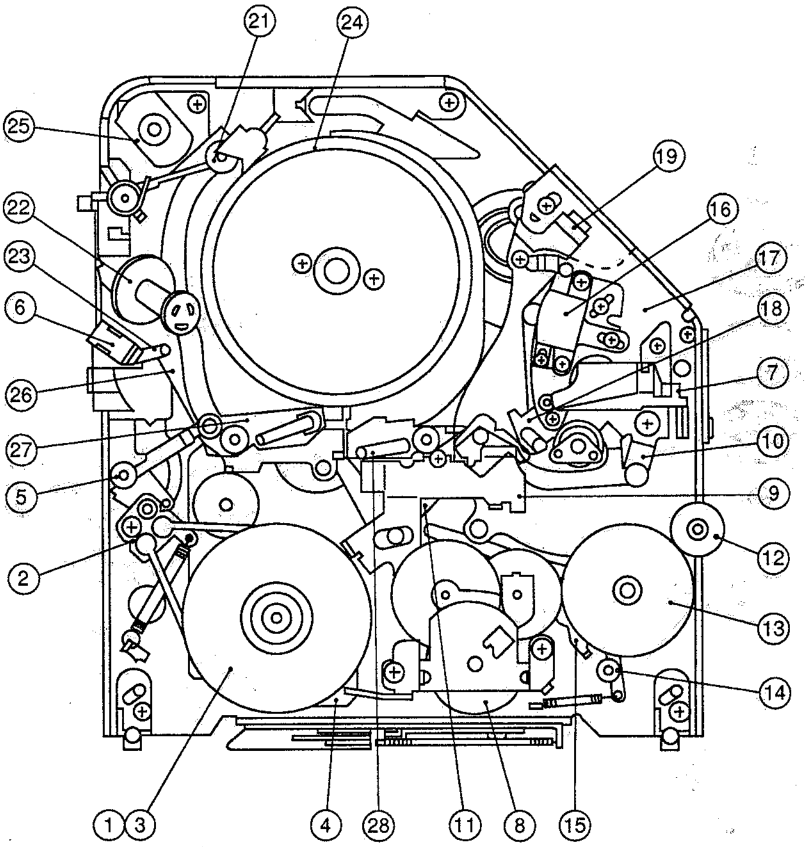
This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP /LOC. No.	START -ING No.	PART		Fig. No.	REMOVAL	INSTALLATION
					*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	1	SUPPLY REEL DISK ASSY	T	M1	(W1)	<NOTE 3>
②	1	BAND ARM ASSY	T	M1	(W2), (P1), *(L1)	-
③	1	BAND REEL ASSY	T	M1	(W2)	-
④	1	CAM SWITCH ASSY	T	M1	*2(L2)	See, Adjustment procedure for Section 2.4, <NOTE 4>
⑤	1- 5	TENTION ARM ASSY	T	M2	(W1)	<NOTE 3>
⑥	6	END SENSOR BKT ASSY	T	M2	-	-
⑦	7	CASSETTE BLOCK	T	M3	(S13)	-
⑧	8	CLUTCH UNIT	T,B	M3	2(S3), *(L3) TIMING BELT	-
⑨	9	GUIDE PLATE	T	M4	2(S4)	-
⑩	9	PINCH ROLLER ARM ASSY	T	M4	(S5)	-
⑪	9	SPRING PLATE ASSY	T	M4	(P3), *(L4)	-
⑫	12	TAKE-UP GEAR	T	M5	(W1)	-
⑬	12	TAKE-UP CLUTCH ASSY	T	M5	(W1), (W2)	<NOTE 3>
⑭	12	SEARCH BRAKE SUB ASSY	T	M5,M5A	(W1), (P4), *(L5)	<NOTE 6>
⑮	9, 12	BRAKE DRIVE LEVER	T	M5,M5A	-	<NOTE 6>
⑯	16	A/C HEAD ASSY	T	M6	2(S6), *CONNECTOR Ⓐ	<NOTE 1>, <NOTE 3>
⑰	17	SUB DECK ASSY	T	M7	(S6), 2(S7)	-
⑱	17	MIDDLE POLE ARM ASSY	T	M7	-	-
⑲	17	MIDDLE POLE CATCHER ASSY	T	M8	(S8)	-
⑳	17	CAPSTAN MOTOR ASSY	T	M8	2(S3), (S8)	<NOTE 7>
㉑	21	HEAD CLEANER ASSY	T	M9,M9A	(W3), *2(L6), (P5)	<NOTE 5>
㉒	21	IMPEDANCE ROLLER ARM ASSY	T	M9,M9A	(W3), *2(L7), (P6)	<NOTE 5>
㉓	23	SUPPLY SLANT POLE ASSY	T	M9,M9A	(S1)	<NOTE 5>
㉔	24	DRUM ASSY	T,B	M10,M11	2(S9), (S2), *BRUSH *CONNECTOR Ⓑ, *RING CONNECTOR ASSY	<NOTE 1>, <NOTE 2>, <NOTE 3>
㉕	25	MODE CTL MOTOR	T	M10	2(S10)	-
㉖	25,26	SUPPLY GUIDE RAIL	T	M12	2(S1)	-
㉗	25, 27	SUPPLY POLE BASE ASSY	T	M12	(S11)	-
㉘	25,26,28	TAKE-UP POLE BASE	T	M12	(S11)	-
㉙	1 – 29	SUPPLY LINK GEAR	T	M13	(W1)	See, Adjustment procedure for Section 2.4
㉚	29	SUPPLY MIDDLE GEAR	T	M13	(W1)	See, Adjustment procedure for Section 2.4
㉛	29	LOADING GUIDE 2	T	M13	-	-
㉜	30,32	LOADING GUIDE	T	M14	3(W1), 3(W4)	-
㉝	29, 34	DRIVE GEAR	T	M14	-	-
㉞	32, 34	LOADING RING ASSY	T	M14	-	See, Adjustment procedure for Section 2.4
㉟	32, 35	MIDDLE POLE CAM GEAR	T	M14	-	See, Adjustment procedure for Section 2.4
㊱	33, 36	LOADING GEAR 2	T	M15	(W1)	-
㊲	33, 37	ENCODER GEAR (1)	T	M15	(W1)	See, Adjustment procedure for Section 2.4
㊳	37, 38	ENCODER GEAR (2)	T	M15	-	-
㊴	37, 39	CONTROL CAM GEAR	T	M15	(W3)	See, Adjustment procedure for Section 2.4

List of Abbreviations:

4(S1) = 4 Screws (S1)		3(K1) = 3 Positioning pins (K1)	
3(L1) = 3 Locking Tabs (L1)		2(P1) = 2 Springs (P1)	
3(SD1) = 3 Solder position (SD1)		2(W1) = 2 Washers (W1)	

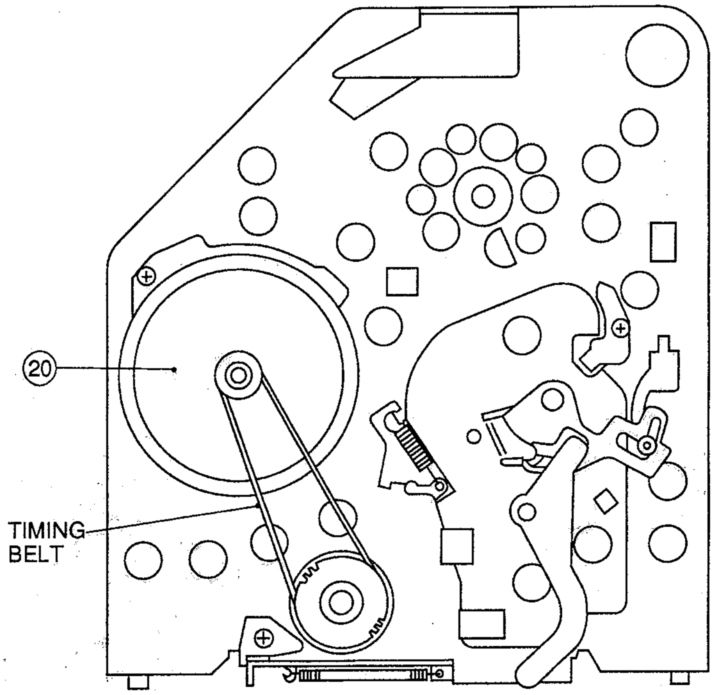
TOP VIEW



㉑
㉔
㉕
⑲
㉒
⑯
㉓
⑰
⑥
⑱
㉖
⑦
㉗
⑩
⑤
⑨
⑫
②
⑬
⑭
①
③
④
㉘
⑪
⑧
⑮

Note : For ㉙ to ㊴, refer to Fig.M13,M14 and M15.

BOTTOM VIEW



⑳
TIMING BELT

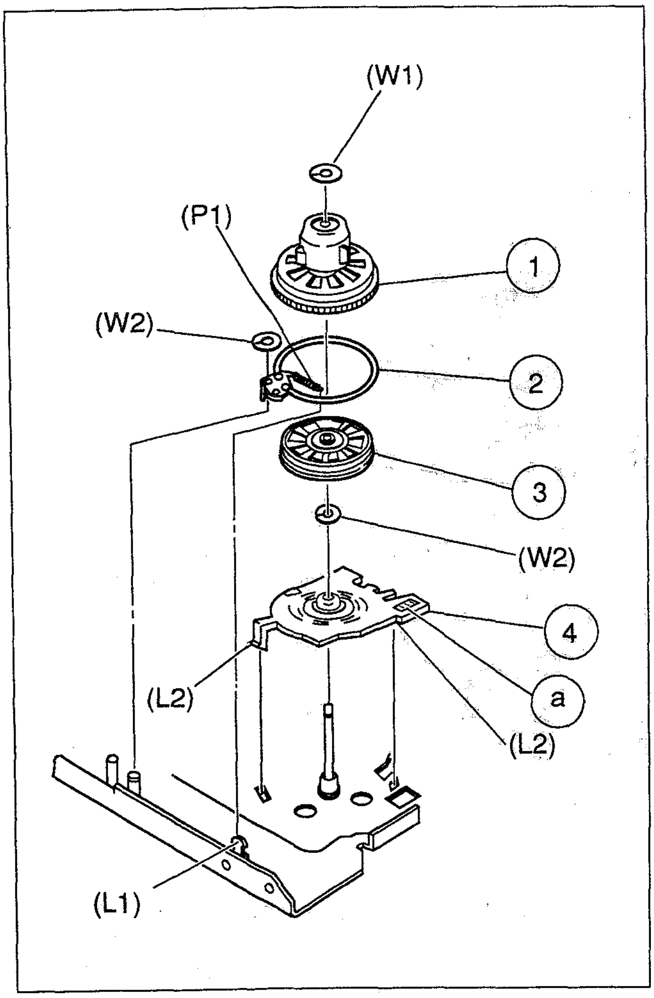

(W1)
(P1)
1
(W2)
2
3
(W2)
4
a
(L2)
(L2)
(L1)

Fig. M1

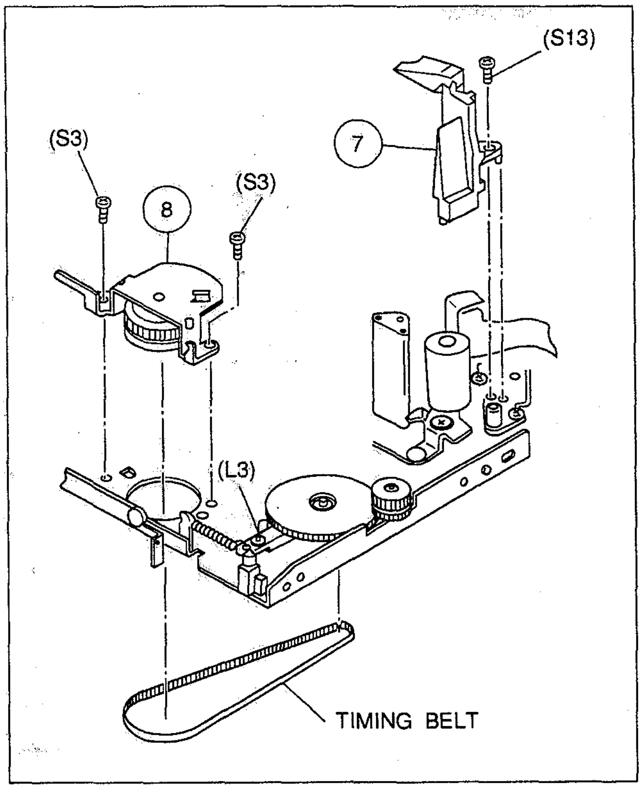

(S13)
(S3)
7
8
(S3)
(L3)
TIMING BELT

Fig. M3

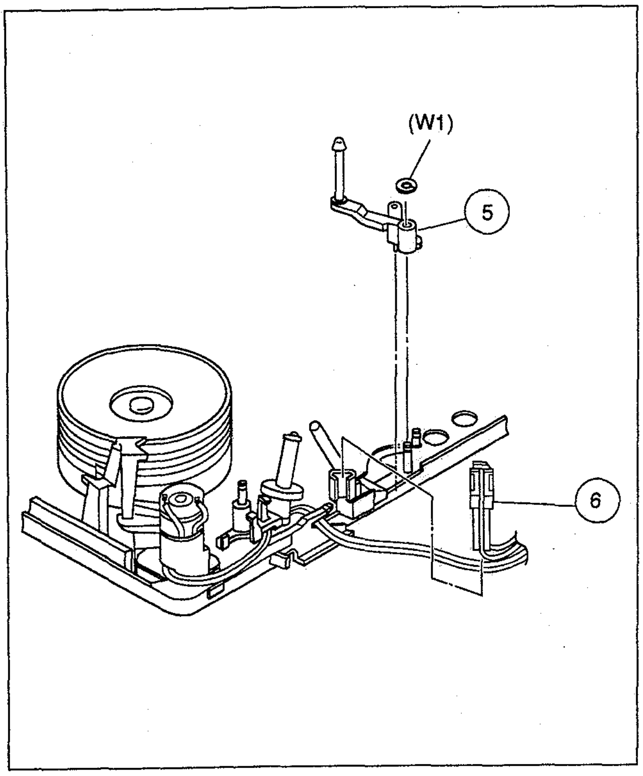


Fig. M2

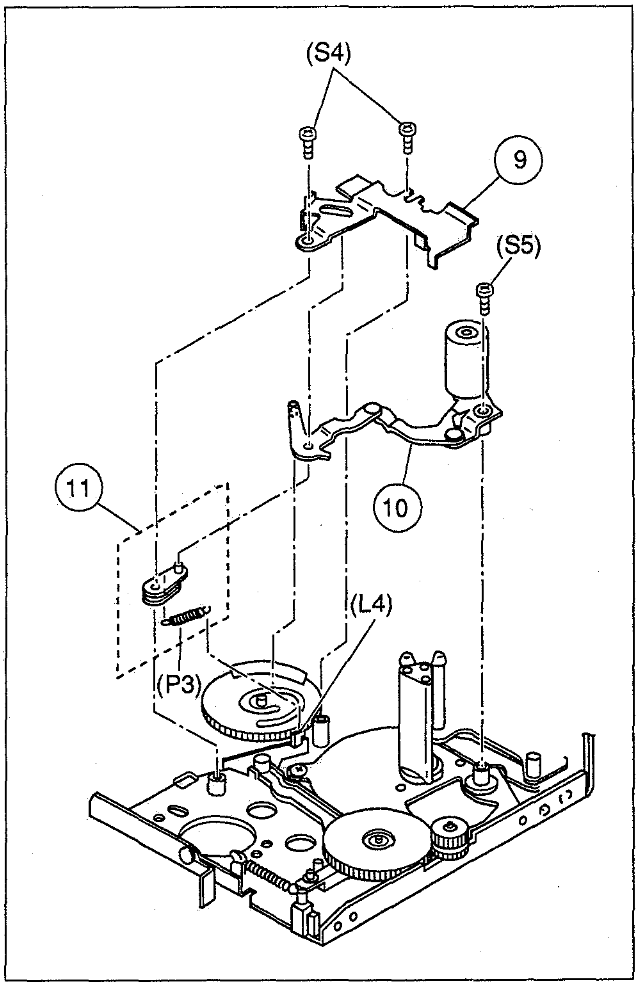

(S4)
9
(S5)
11
10
(L4)
(P3)

Fig. M4

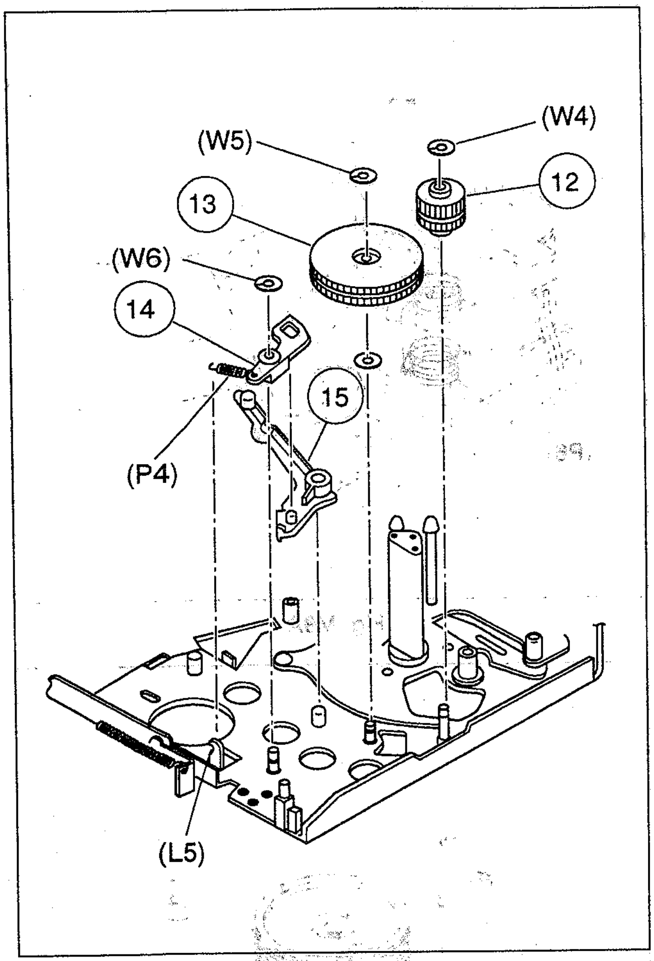

(W5)
(W4)
12
13
(W6)
14
15
(P4)
(L5)

Fig. M5

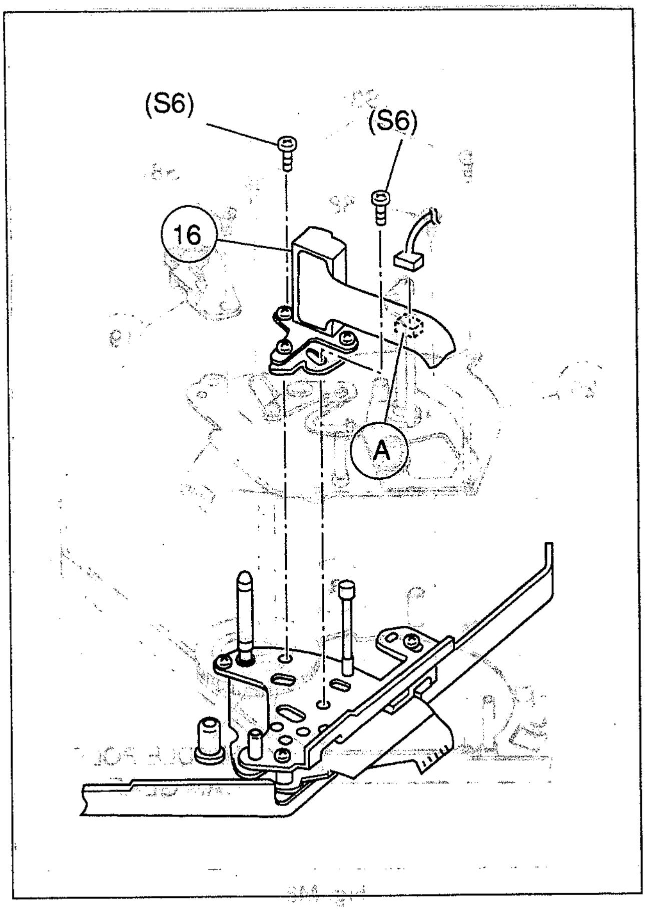


Fig. M6

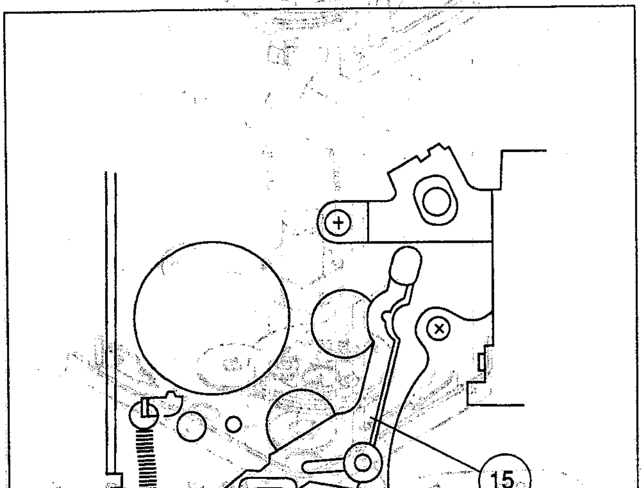


Fig. M5A

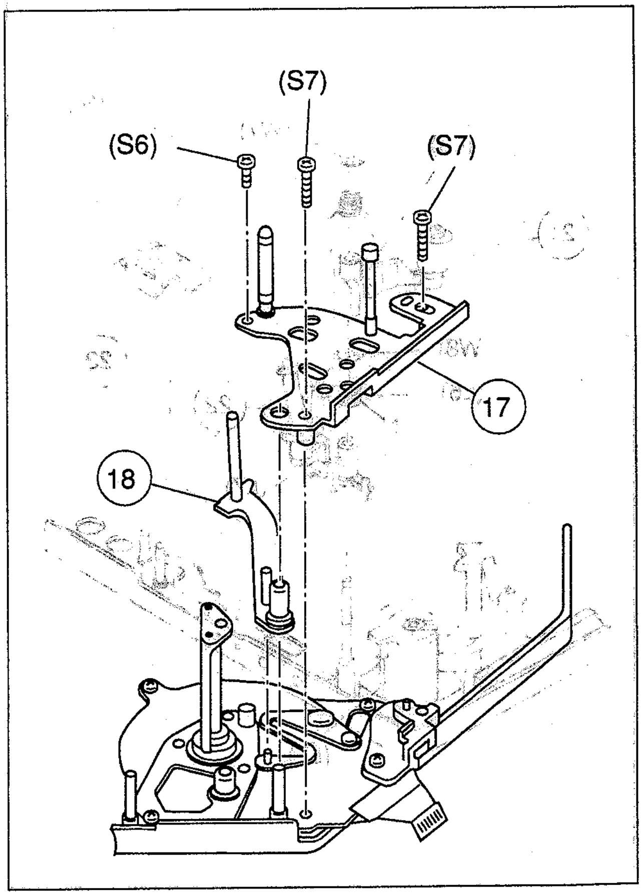

(S7)
(S6)
(S7)
17
18

Fig. M7

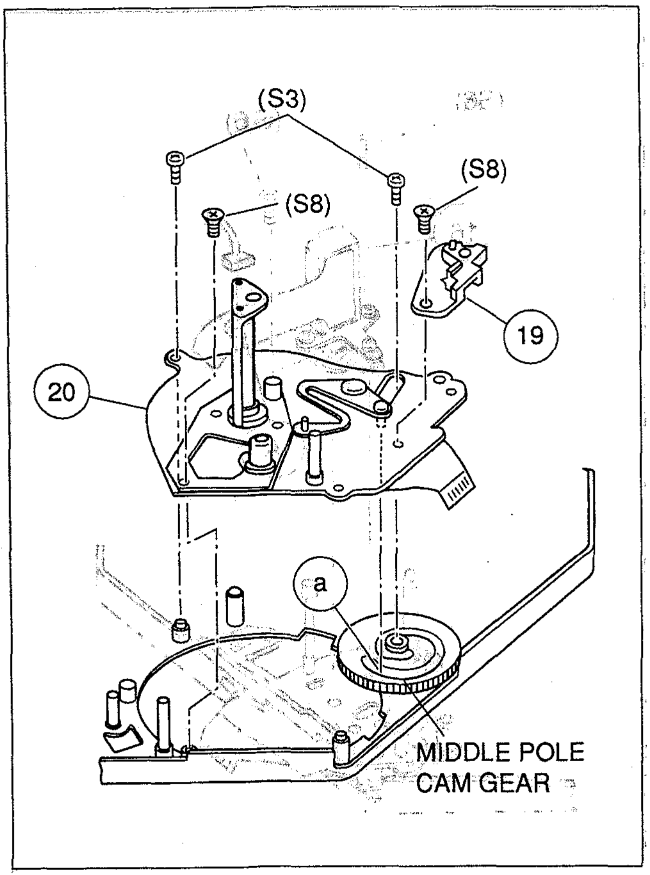

(S3)
(S8)
(S8)
19
20
a
MIDDLE POLE
CAM GEAR

Fig. M8

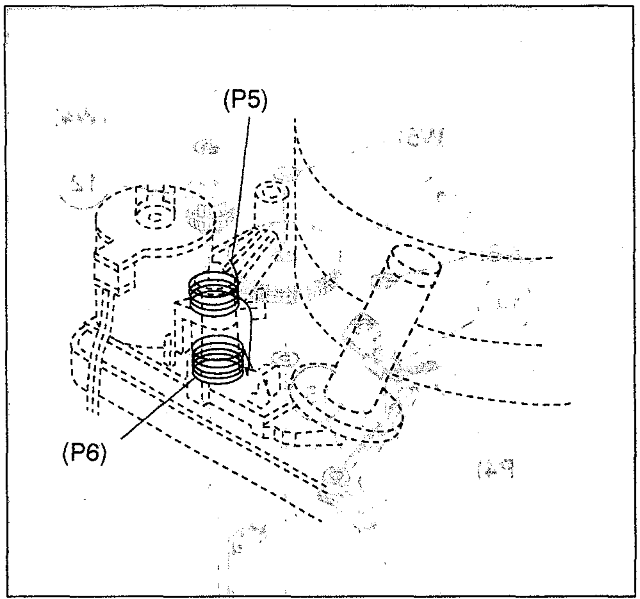


Fig. M9A

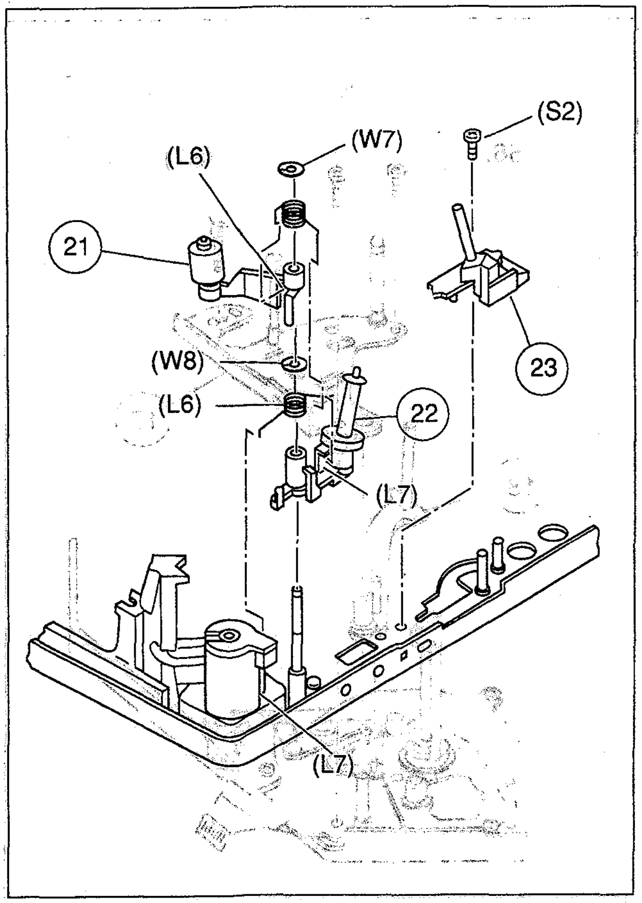

(S2)
(W7)
(L6)
21
23
(W8)
(L6)
22
(L7)
(L7)

Fig. M9

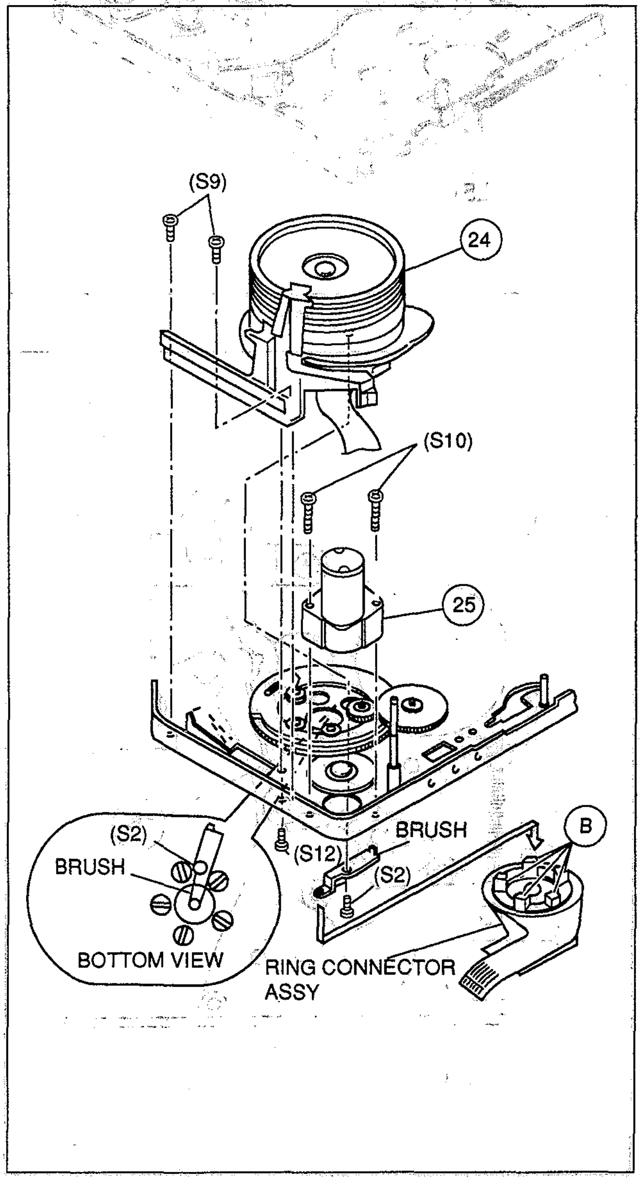

(S9)
24
(S10)
25
(S2)
BRUSH
BOTTOM VIEW
(S12)
BRUSH
(S2)
B
RING CONNECTOR
ASSY

Fig. M10

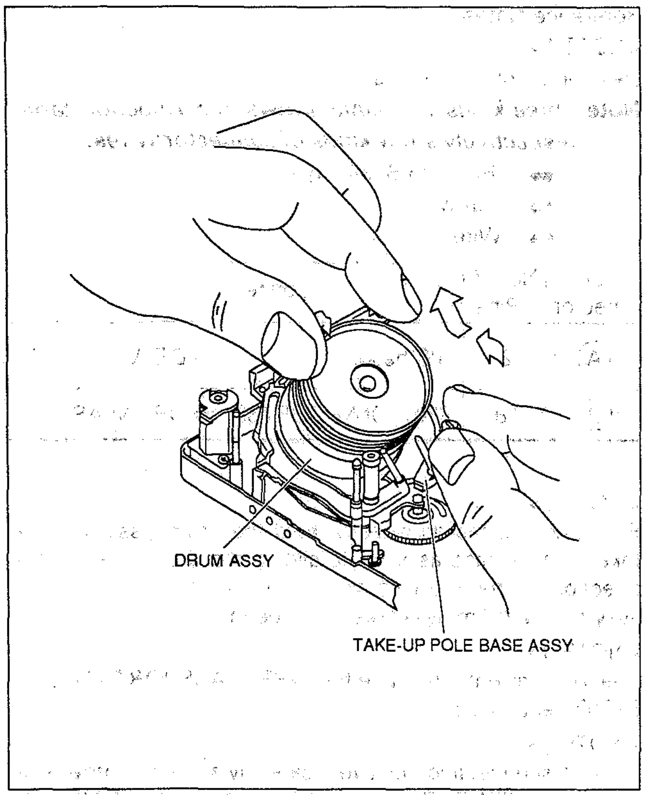

DRUM ASSY
TAKE-UP POLE BASE ASSY

Fig. M11

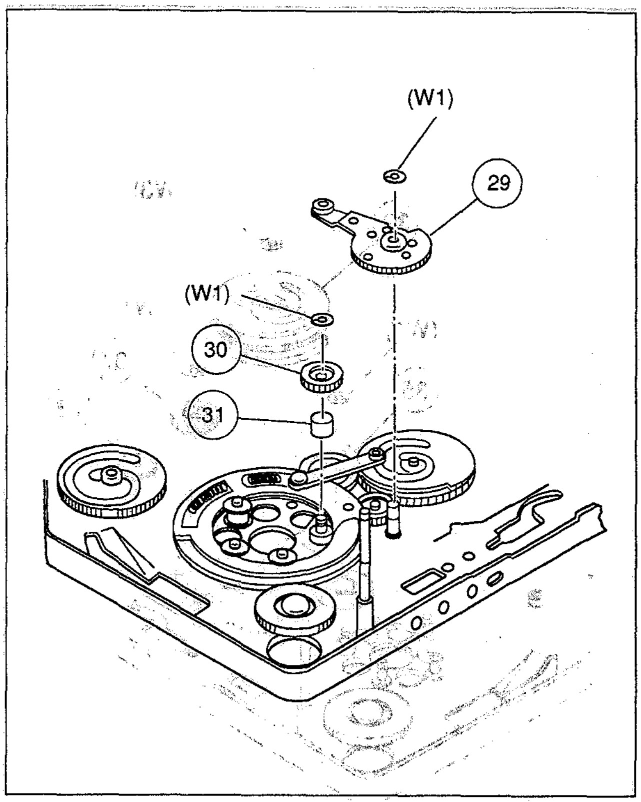

(W1)
29
(W1)
30
31

Fig. M13

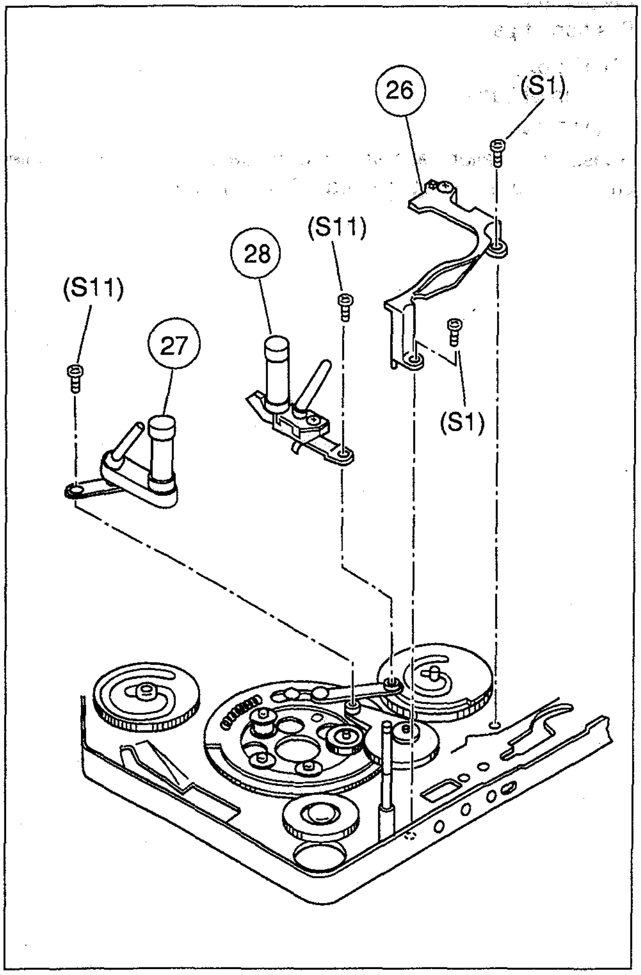

26
(S1)
28
(S11)
(S11)
27
(S1)

Fig. M12

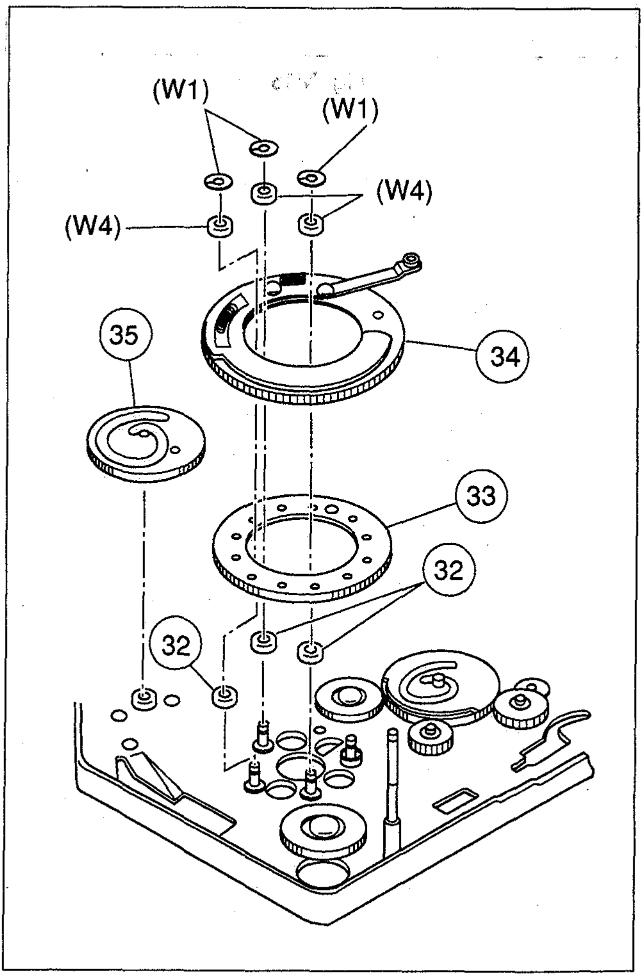

(W1)
(W1)
(W4)
(W4)
35
34
33
32
32

Fig. M14

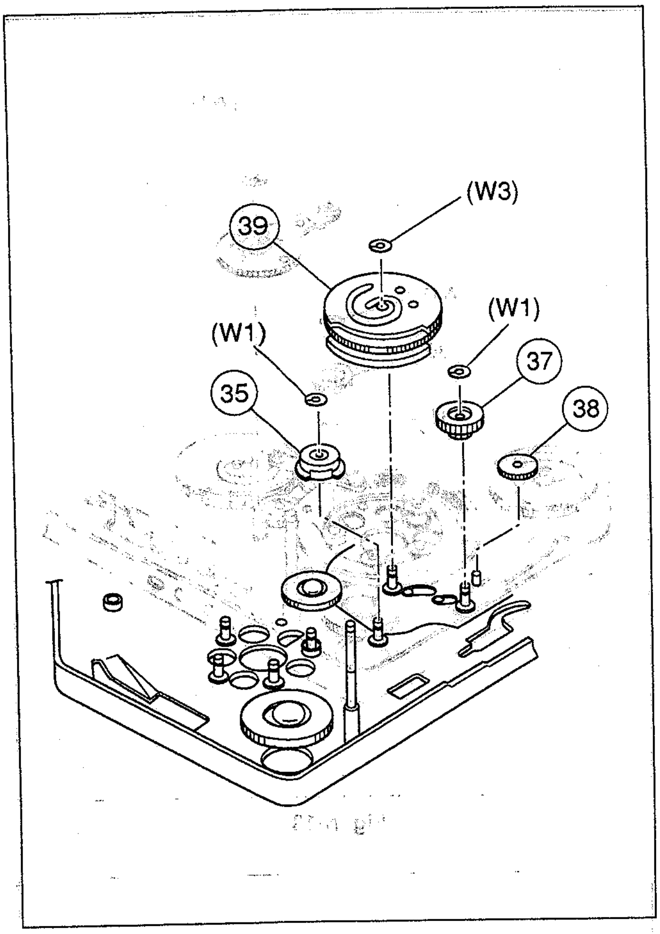


Fig. M15

Reference Notes:

<NOTE 1>

Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	2	A/C head ↔ DEW SENSOR
Ⓑ	18	RING CONNECTOR ASSY ⇔ DRUM ASSY

<NOTE 2>

For removing the drum assy, hold the drum assy and the take-up pole base assy while sliding the drum assy in the direction of the arrow so as to slide the take-up pole base assy off the drum assy take-up guide rail.

<NOTE 3>

See, Adjustment procedure for TAPE TRANSPORT ADJUSTMENT section 2.5.

<NOTE 4>

When disconnecting, do it very carefully since the other side connector (SENSOR board side) is attached to ⓐ flexible wire.

<NOTE 5>

Position of parts

<NOTE 6>

Position of parts.

<NOTE 7>

Reassembly, align capstan motor guide pin with middle pole cam gear, positioning marked ⓐ in Fig. M8.

2.3 REPLACEMENT OF UPPER DRUM

Note: *Be very careful not to touch any hand of a new upper drum as well as not to damage the drum.*

2.3.1 Removal of upper drum

1. Carefully unsolder at 10 points shown in Fig. 2-3-1 on the UPPER DRUM board.

   Note: *If solder is not completely removed, it may cause damage of the head pins when the upper drum is removed.*

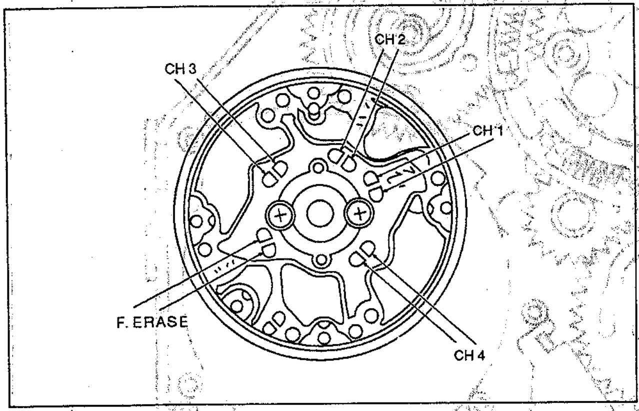


Fig. 2-3-1 Upper drum replacement (1)

2. Remove two screws and draw out the upper drum in the direction of the arrow.

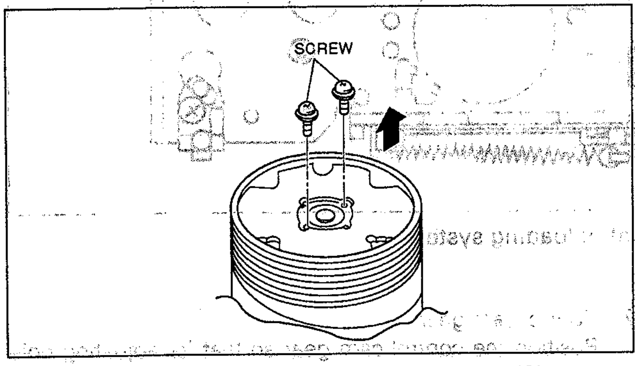


Fig. 2-3-2 Upper drum replacement (2)

3. When it is hard to remove the upper drum, set the upper drum removal tool (YTU94031A) with the screws which are once removed in the step 2, and tighten the center screw to remove it easily.

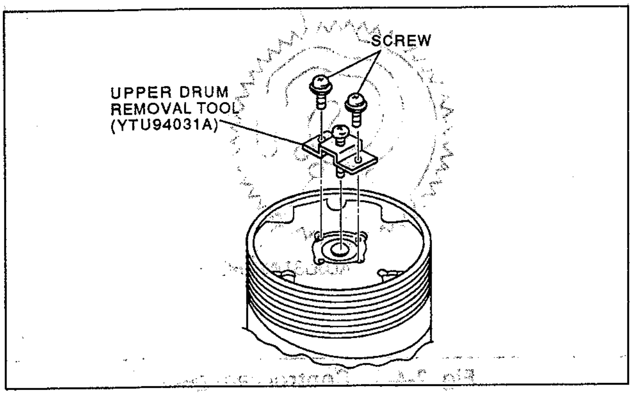


Fig. 2-3-3 Upper drum replacement (3)

2.3.2 Installation of new upper drum

1. Before installing a new upper drum, insert a soldering iron (50 W) into the hole of the upper drum and heat it for about 3 to 5 minutes to expand it.

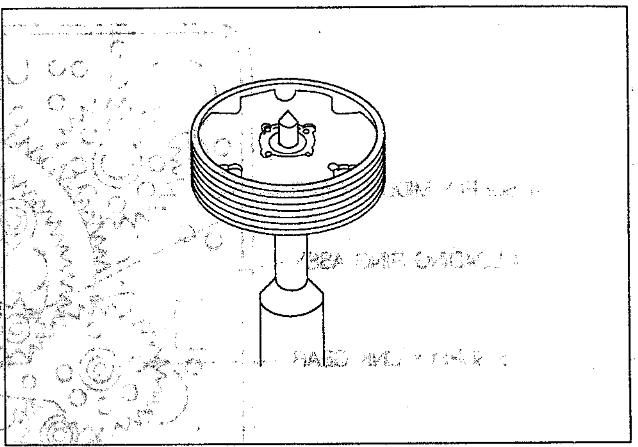


Fig. 2-3-4 Upper drum replacement (4)

2. Install the new upper drum so that its arrow marking is positioned at an angle of 140° to the rotary transformer's mold (having no relay pin) of the lower drum.

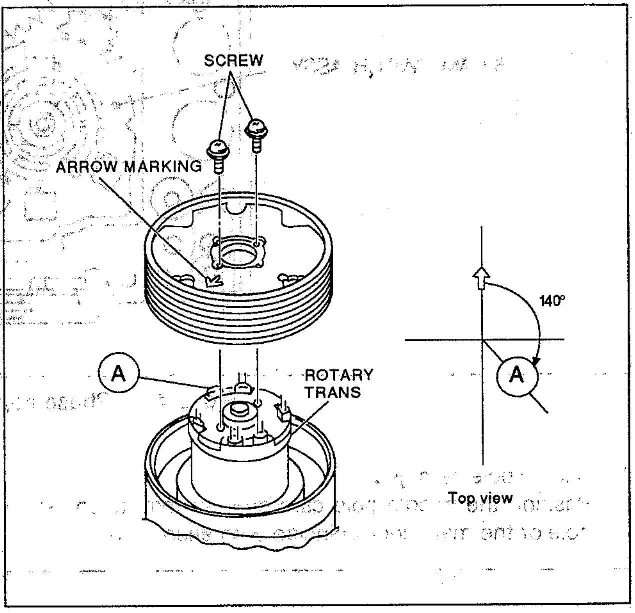


Fig. 2-3-5 Upper drum replacement (5)

3. Tighten the screws lightly first, then, alternately tighten them gradually as the upper drum is cooled.
4. After replacement finishes, make sure to check up and deck section adjust.

2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

Note: *Pay careful attention to the installing order and phase of mechanism parts of the loading system.*

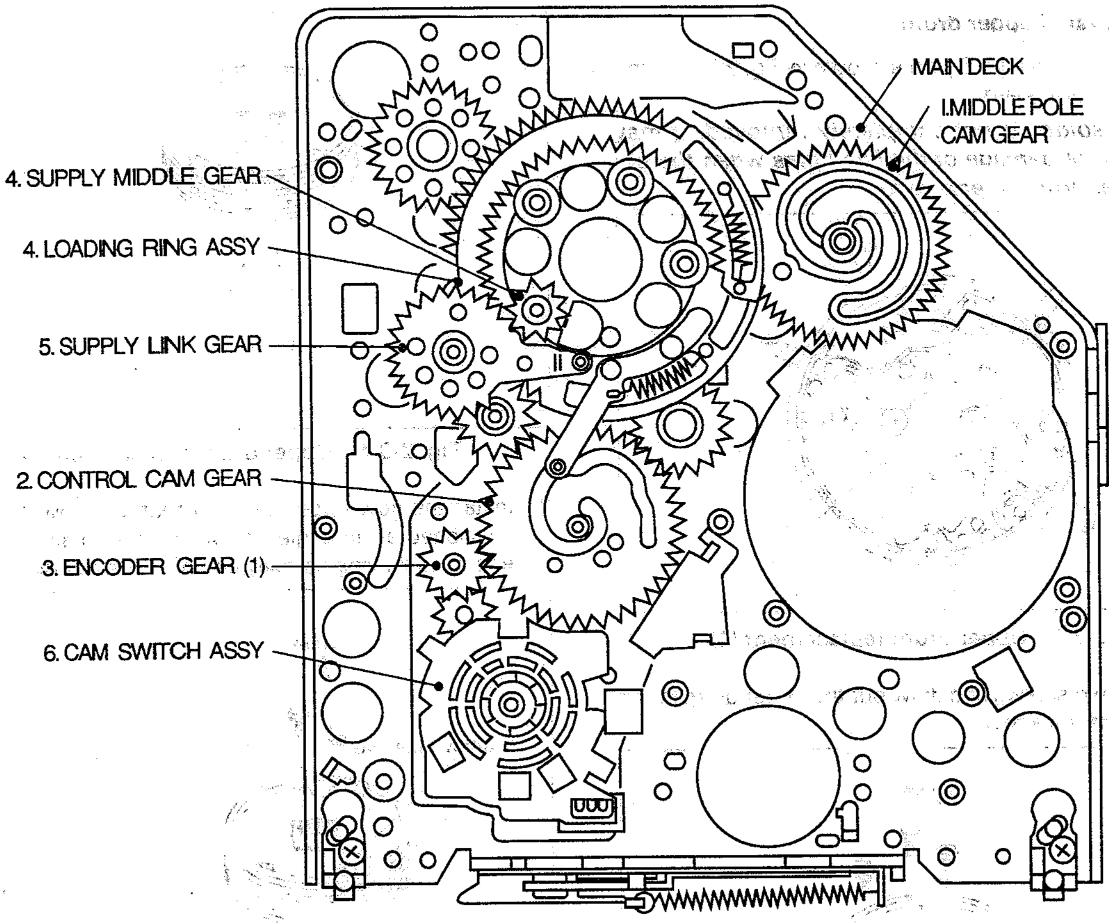

MAIN DECK
1.MIDDLE POLE CAM GEAR
4. SUPPLY MIDDLE GEAR
4. LOADING RING ASSY
5. SUPPLY LINK GEAR
2. CONTROL CAM GEAR
3. ENCODER GEAR (1)
6. CAM SWITCH ASSY

Fig. 2-4-1 Phase adjustment of loading system

1. Middle pole cam gear
   Position the middle pole cam gear so that its adjusting hole of the main deck coincide with each other.

2. Control cam gear
   Position the control cam gear so that its adjusting hole of the main deck coincide with each other.

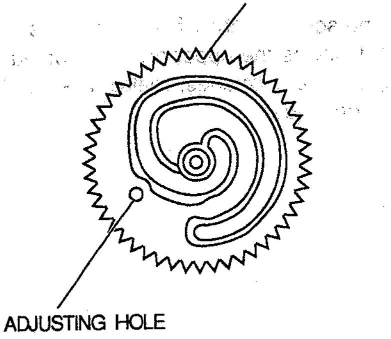

MIDDLE POLE CAM GEAR
ADJUSTING HOLE

Fig. 2-4-2 Middle pole cam gear

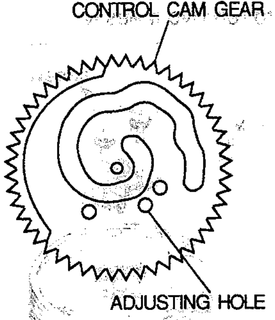

CONTROL CAM GEAR
ADJUSTING HOLE

Fig. 2-4-3 Control cam gear

3. Encoder gear (1)
   Engage the encoder gear (1) with the control cam gear so that the marking of the encoder gear (1) is positioned in the line between the axes of the encoder gear (1) and the control cam gear.

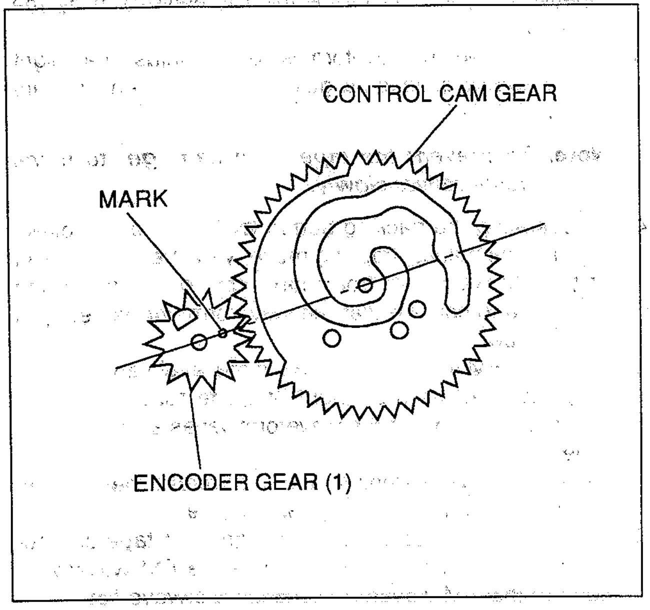

CONTROL CAM GEAR
MARK
ENCODER GEAR (1)

Fig. 2-4-4 Encoder gear (1)

4. Loading ring assembly, supply middly gear
   Use supply link gear to established position of loading ring assembly, then remove supply link gear till next slignment. Engage the supply middle gear with the loading ring assembly so that two teeth of the supply middle gear and the internal first two teeth of the loading ring assembly are meshing with each other.

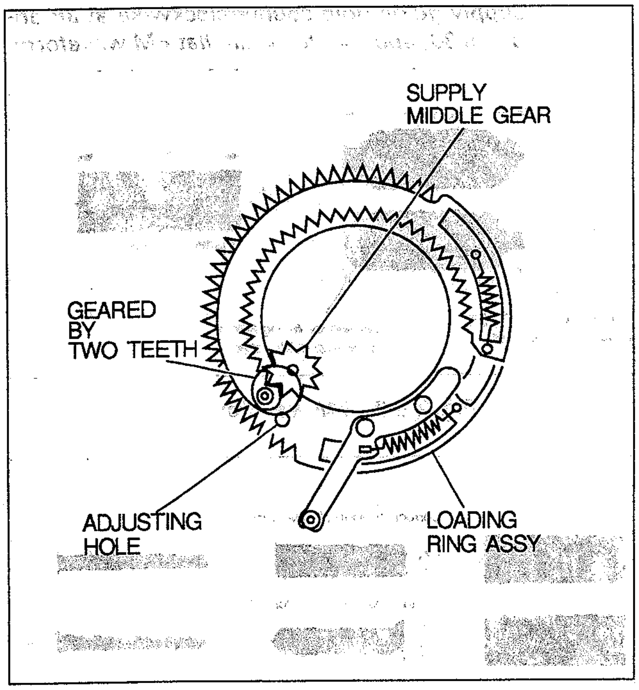

SUPPLY MIDDLE GEAR
GEARED BY TWO TEETH
ADJUSTING HOLE
LOADING RING ASSY

Fig. 2-4-5 Loading ring assy, supply middle gear

5. Supply link gear
   Engage the supply link gear so that its hole coincides with that of the loading ring assembly.

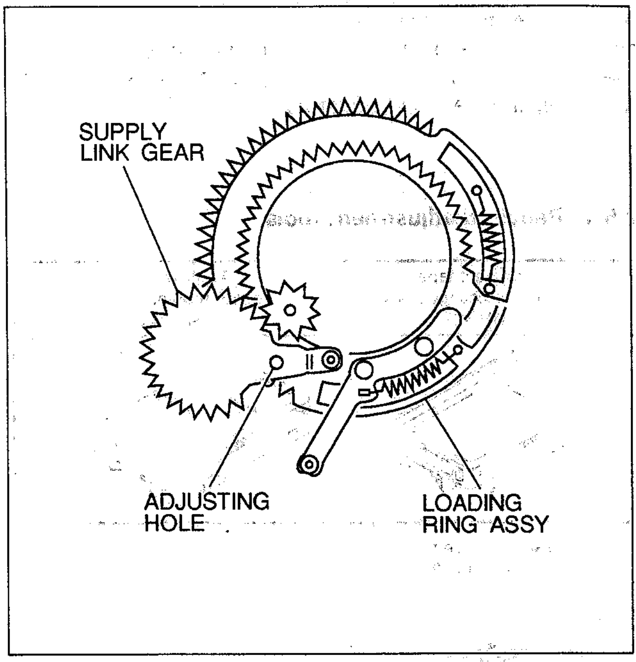

SUPPLY LINK GEAR
ADJUSTING HOLE
LOADING RING ASSY

Fig. 2-4-6 Supply link gear

6. Cam switch assembly
   Set the cam switch assembly so that the notch of its gear teeth coincides with both the rectangle hole Ⓐ and the hold of the main deck.

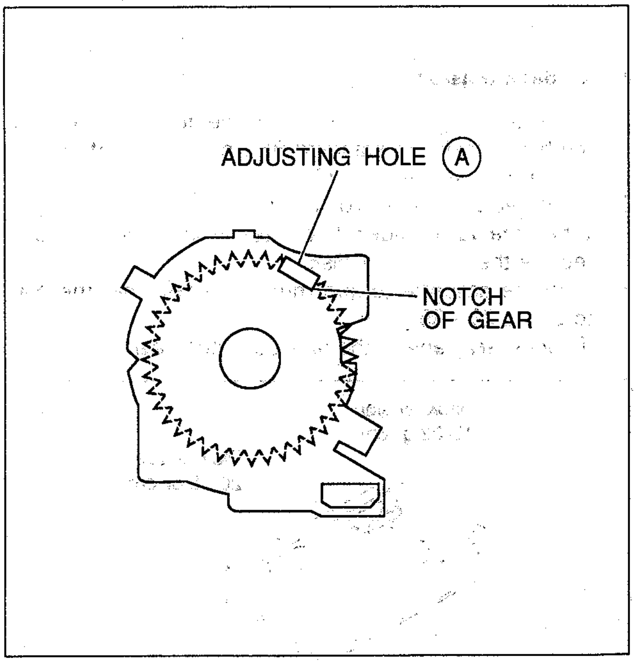

ADJUSTING HOLE Ⓐ
NOTCH OF GEAR

Fig. 2-4-7 Cam switch assy

After completion of the above steps 1 through 6, make sure to confirm that respective phases are correct.

2.5 TAPE TRANSPORT ADJUSTMENT

In most cases the deck section is in need electrical adjustment, it results from replacement of worm mechanical parts or video heads. In the event of malfunction with electrical circuits, troubleshouting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

2.5.1 Required adjustment tools

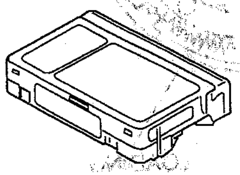
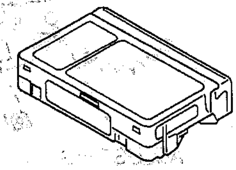
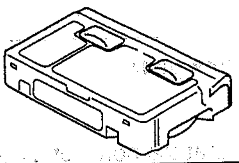
Alignment tape for SP interchangeability (MHP-C)	Alignment tape for EP interchangeability (MHP-LC)
	
Cassette torque meter PUJ50431-2	
	

Table 2-5-1

2.5.2 Back tension

1. Set a cassette torque meter onto the deck and measure the back tension in standard REC mode to confirm that the back tension is 13 – 22 gr-cm.
2. If not, replace the tension band. When the value widely fluctuates in the measurement, replace the supply reel disk.
3. With the cassette torque meter, confirm that the play torque is 20 – 35 gr-cm.
   If necessary, replace the take-up clutch gear.

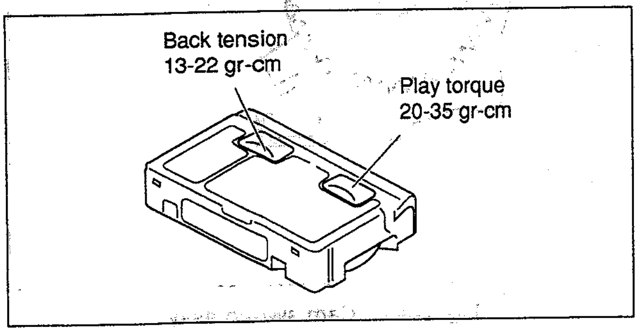


Fig. 2-5-1 Cassette torque meter

2.5.3 Tape pattern

1. Observe signal at pin 1 of CN15 (V. TP FM) with external trigger from pin 7 of CN15 (V. H. FF) on the MAIN board.
2. Play back the SP stairstep signal of the alignment tape(MHP-C), and maximize the FM waveform by the tracking button.
3. If the observed FM waveform is not flat, adjust the height of the supply or take-up guide roller with an ordinary screwdriver (–).

   Note: *To prevent the tape from damage, turn the guide rollers slowly.*

4. By operating the tracking button (both in + and – directions) in the manual tracking mode, vary the output level of the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape.
5. When the FM waveform breaks in the level varying process, subtly adjust the height of guide rollers at every breaking point so that the waveform varies as flat as possible.
   Repeat the above steps 4. and 5. several times to confirm that the waveform is flat as a whole.
6. Play the EP stair step signal of alignment tape and adjust the tracking control to maximize the FM waveform, confirm that FM waveform variation is always flat.
7. Record the signal and play it back in both of the SP and EP mode, and confirm that the FM waveform is flat in both modes.

   Note: *If there is FM falling at the supply side during self-recording and play back in both of the SP and EP mode, recheck back tension first. When back tension is normal, replay stairstep signal of the alignment tape and perform fine adjustment of the supply guide pole height (turn the supply guide pole counterclockwise at an angle of 30° approx.) to obtain flat FM waveform.*

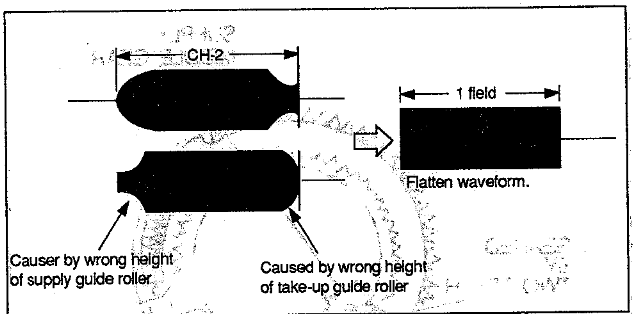

CH-2
1 field
Flatten waveform.
Causer by wrong height of supply guide roller
Caused by wrong height of take-up guide roller

Fig. 2-5-2 FM waveform-1

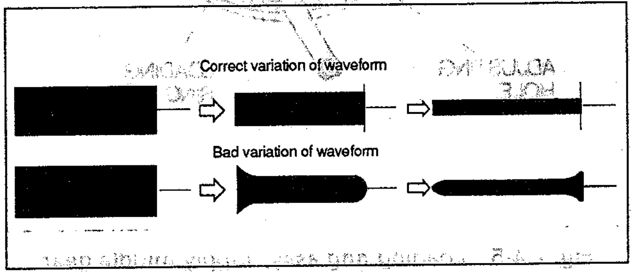


Fig. 2-5-3 FM waveform-2

8. Through the above steps, confirm that there occur no wrinkling and damage in the tape around the impedance roller and TU side guide pole whenever the deck is in operation of Loading/Unloading, Search Rewind and at mode change from Search Rewind to play mode. If wrinkling or damage in the tape occurs around the TU guide pole, adjust the angle (slant) of the A/C head to the tape. So that the tape normally runs along the lower flange of the guide pole.

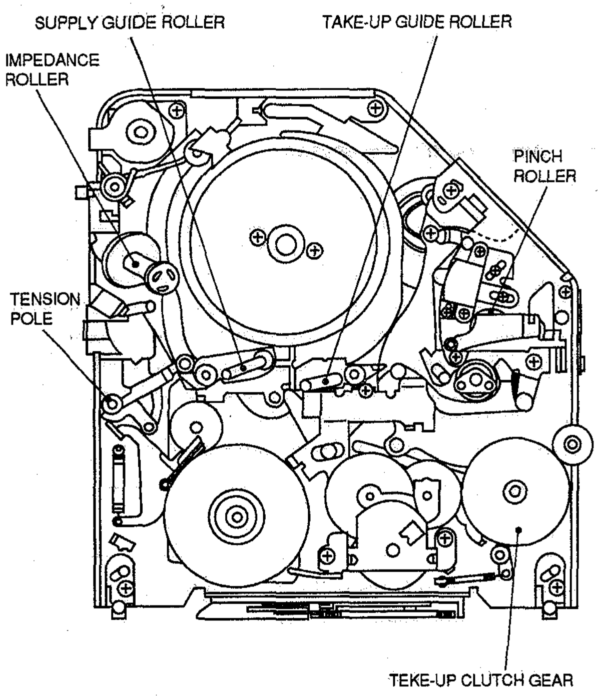

SUPPLY GUIDE ROLLER
TAKE-UP GUIDE ROLLER
IMPEDANCE ROLLER
PINCH ROLLER
TENSION POLE
TEKE-UP CLUTCH GEAR

Fig. 2-5-4 Tape transport system

2.5.4 A/CTL head height & azimuth

1. Play back the SP 7 kHz segment of the alignment tape (MHP-C) and observe waveform at TP403 (AUDIO OUT) on the MAIN board.

   Note: *When the output level fluctuation is less than −2 dB, adjustment is not required.*

2. If necessary, turn the screw Ⓐ (reference), Ⓑ (bent forward) and Ⓒ (azimuth) gradually (at an angle of 45° approx.) in the same direction to obtain the maximum output level.
3. As final fine adjustment, adjust the screw Ⓑ for minimum level fluctuation and the screw Ⓒ for maximum output level.

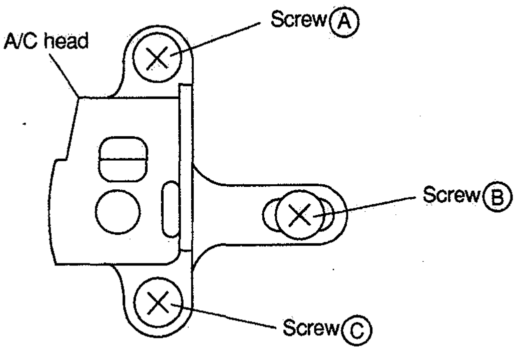

A/C head
ScrewⒶ
ScrewⒷ
ScrewⒸ

Fig. 2-5-5 A/C head

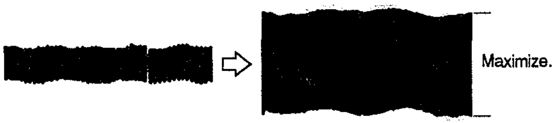


Fig. 2-5-6 Audio signal

2.5.5 Phase of control head (X value)

1. Play back the SP stairstep signal of the alignment tape and observe signal at pin 1 of CN15(V.TP FM) with external trigger from pin 7 of CN15(V.H.FF) on the MAIN board.
2. Operate the tracking button in the manual tracking mode and confirm that the FM output level is maximum at the center position of the tracking button as shown in Fig. 2-5-8.
3. If necessary, slightly loosen the setscrews Ⓓ and Ⓔ and insert the Tweezers into the notch and guide hole to move the A/C head fully in the direction of the capstan to the extent.
4. Gradually move the A/C head toward the drum to find the position where the FM output level maximum for the first time (a' – b' in Fig. 2-5-8).
5. Fine adjust the phase of the A/C head and tighten the setscrews Ⓓ and Ⓔ at the point c which is the mid-point between a and b.
6. Play back the EP stairstep signal of the alignment tape (MHP-LC) and confirm that the FM waveform is maximized at the center detent position of the tracking button.
7. Confirm that the above steps 2. and 6. are satisfactory at the same time.
   If not, repeat the steps 3. through 6..

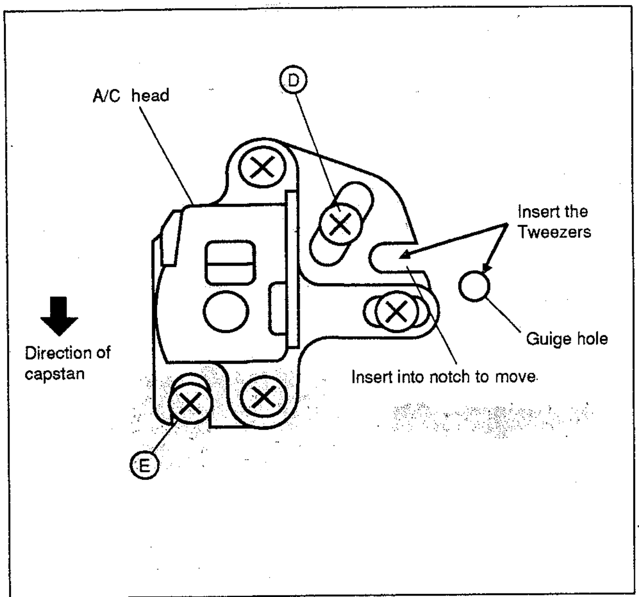


Fig. 2-5-7 Phase of control head

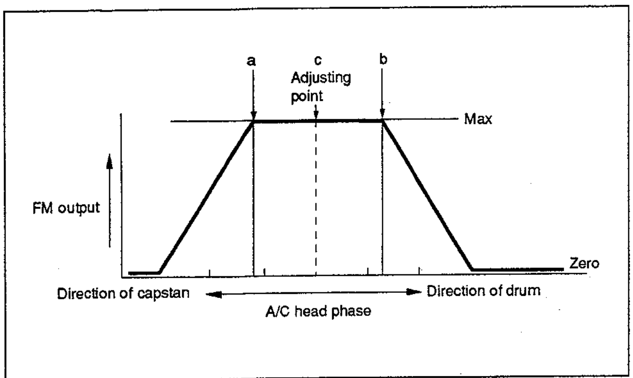


Fig. 2-5-8 Phase adjustment point of control head

2.6 REMARKS

2.6.1 Cleaning

1. For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth or Kimwipe with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

   Note: *Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.*

2. For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.
3. After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.6.2 Applying oil and grease

1. Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.
2. For parts and points to apply oil and grease, refer to the exploded view of the mechanism assembly (M3).
   Table 2-6-1 specifies oil and grease to be used.
3. When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Neme	Part No.	Symbol in drawing
Grease	Moriton Grease No. 1	MOS2-C	A
Oil	Cosmo Hydro HV100	YTU94027	B

Table 2-6-1 Specific oil and grease to be used

2.6.3 Checkup

After replacement of the supply reel disk and tension band, make sure to inspect beck tension according to the adjustment procedure of MECHANISM ADJUSTMENT section.

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJSUTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR) . General deck system and camra system adjustment are not required. However, if MAIN board need replacement, please use original E^2PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-6). Please contact to JVC service for detaile information.

- OP block
- E^2PROM (IC302 of PROCESS board)

In the event of malfunction with electrical circuits, trouble-shooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between opration unit and DECK chassis.

2. Required test equipment

1. Color TV monitor.
2. AC power adapter (AA-V10 and AA-V6U or equivalent).
3. Oscilloscope (Dual-trace type, for more than 20 MHz).
4. Digital voltmeter

3. Required adjustment tools

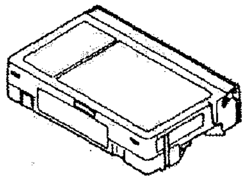
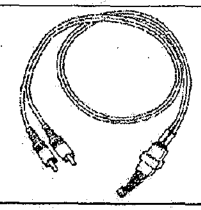
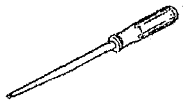
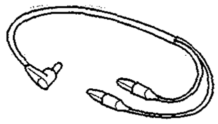
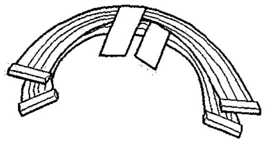
Alignment tape for SP interchangeability (MHP-C or MH-C1)	Y/C separator cable YTU93006
	
0.35 mm adjusting driver YTU94028	Power cord YTU94060A
	
Pacth cord set YTU93074A	
	

Table 3-1-1 Required adjustment tools

4. Setup for E. VF section adjustment

1. Referring to 'sec. 1. DISASSEMBLE' and connect the E. VF connector to CN3 of the REAR board of deck section.

5. Required adjustment tools for Service support system

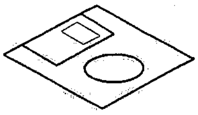
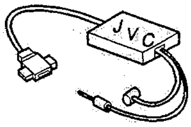
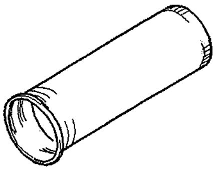
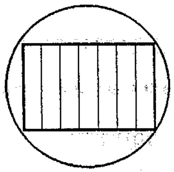
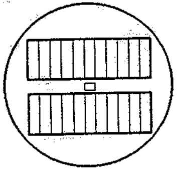
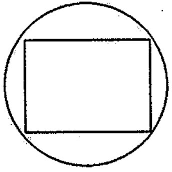
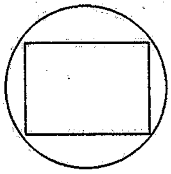
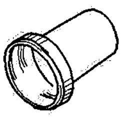
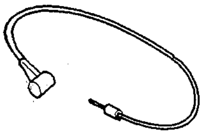
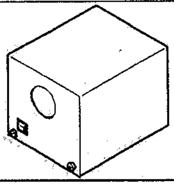
Service Support System software YTU94057-10	Interface cable YTU93063	Infinity adjustment lens YTU92001B	Colour bar chart YTU92001-051
			
Gray scale chart YTU92001-052	White balance chart YTU92001-053	Skintone chart YTU92001-054	1 m focus chart YTU92001-016
			
Adapter cable YTU94066		Light box YTU93072	
			

Table 3-1-2 Required adjustment tools for Service support system

6. Connections for Service support system

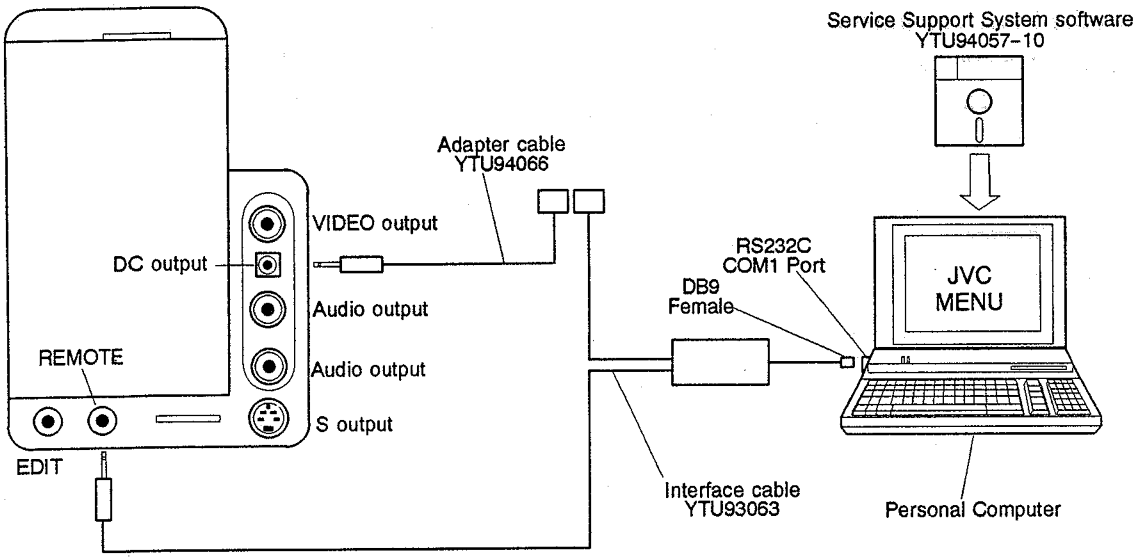

Service Support System software
YTU94057-10
Adapter cable
YTU94066
VIDEO output
DC output
Audio output
Audio output
S output
REMOTE
EDIT
RS232C
COM1 Port
DB9
Female
JVC
MENU
Interface cable
YTU93063
Personal Computer

Fig. 3-1-1 Connections for Service support system

3.1.2 CCD CIRCUIT

Notes:
- *Unless otherwise specified, all measurement points and adjustment parts are located on CCD board.*
- *During adjustment, apply 6.0 V DC from a DC power supply or an AC power adaptor to the rear board holder assembly pins. (Use care regarding pin polarity.)*

1. CLOCK TIMING

Signal	•Infinity adjustment lens with a gray scale chart
Mode	•EE •D. I. STABILIZER : OFF
Equipment	•Oscilloscope
Measurement point	•S OUT pin 3 (Y OUT) [REAR board]
Adjustment part	•R223 (CLOCK TIMING)
Specification	•Minimize the vertical noise

1) Attach the infinity lens with a gray scale chart to the camera lens and observe Y out waveform at pin 3 of S OUT.
2) Adjust R223 to minimize the vertical noise of the second step from bottom of the gray scale on the oscilloscope.

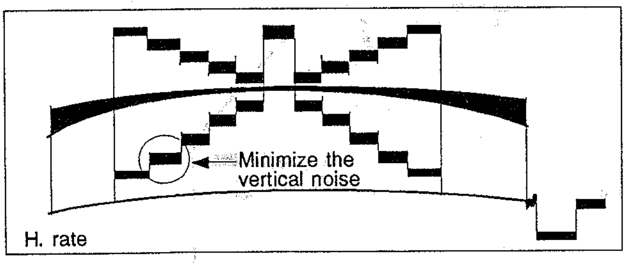

Minimize the vertical noise
H. rate

Fig. 3-1-2 Clock timing

■ CIRCUIT PROTECTOR AND BATTERY TERMINAL LOCATION FOR REAR BOARD

- REAR-

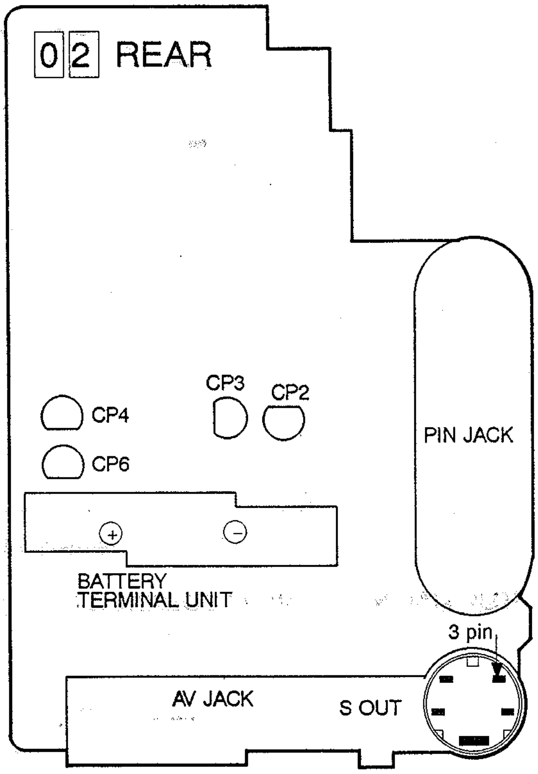

02 REAR
CP4
CP3
CP2
CP6
PIN JACK
⊕
⊖
BATTERY TERMINAL UNIT
3 pin
AV JACK
S OUT

Fig. 3-1-3 Circuit protector and battery terminal location for REAR board assembly

■ ADJUSTMENT ELEMENT LOCATION FOR CAMERA SECTION

- CCD-

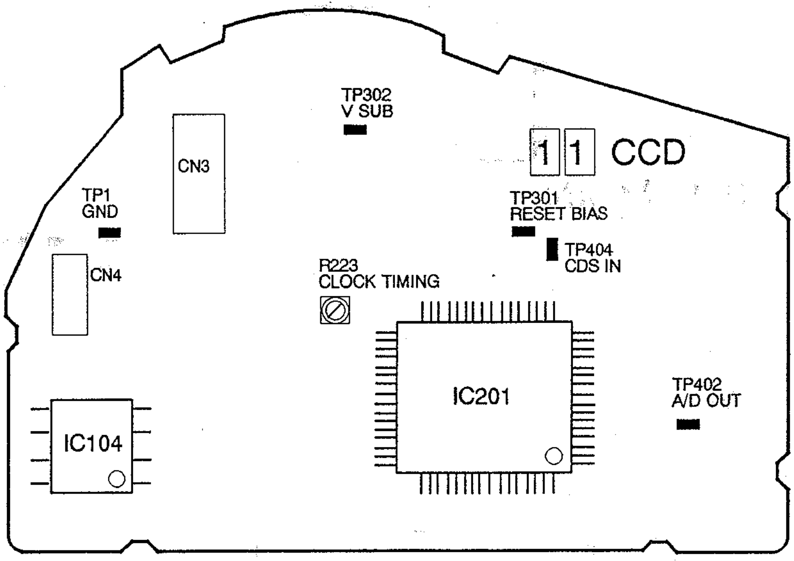

TP302 V SUB
11 CCD
CN3
TP1 GND
TP301 RESET BIAS
TP404 CDS IN
CN4
R223 CLOCK TIMING
IC201
TP402 A/D OUT
IC104

Fig. 3-1-4 Adjustment element location for CCD board assembly

■ ADJUSTMENT ELEMENT LOCATION FOR CAMERA SECTION

- CCD-

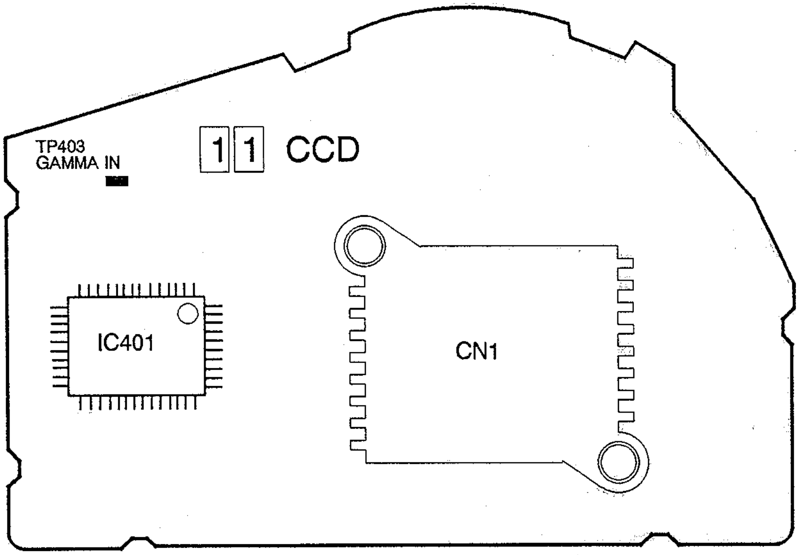
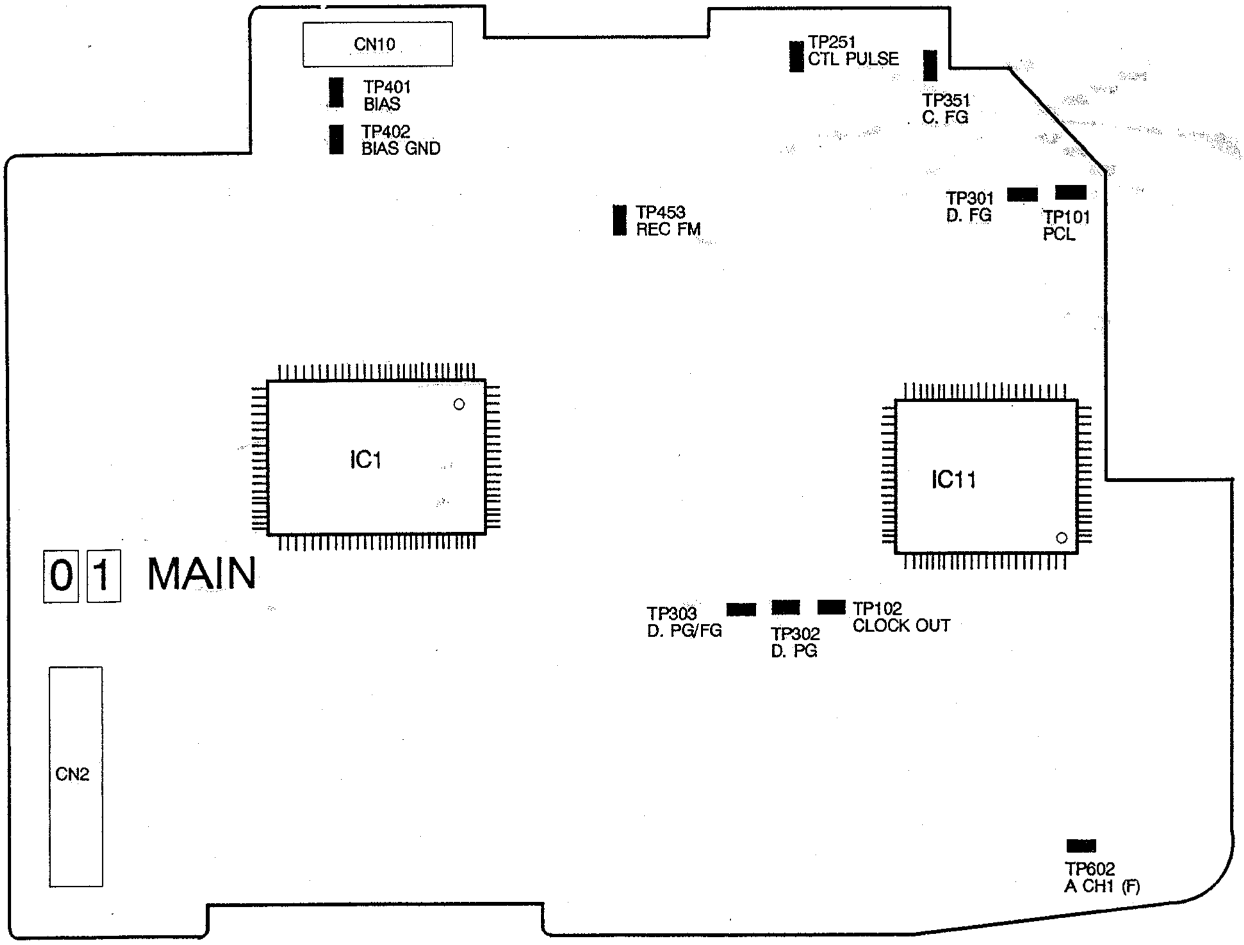

TP403
GAMMA IN
1 1 CCD
IC401
CN1

Fig. 3-1-5 Adjustment element location for CCD board assembly

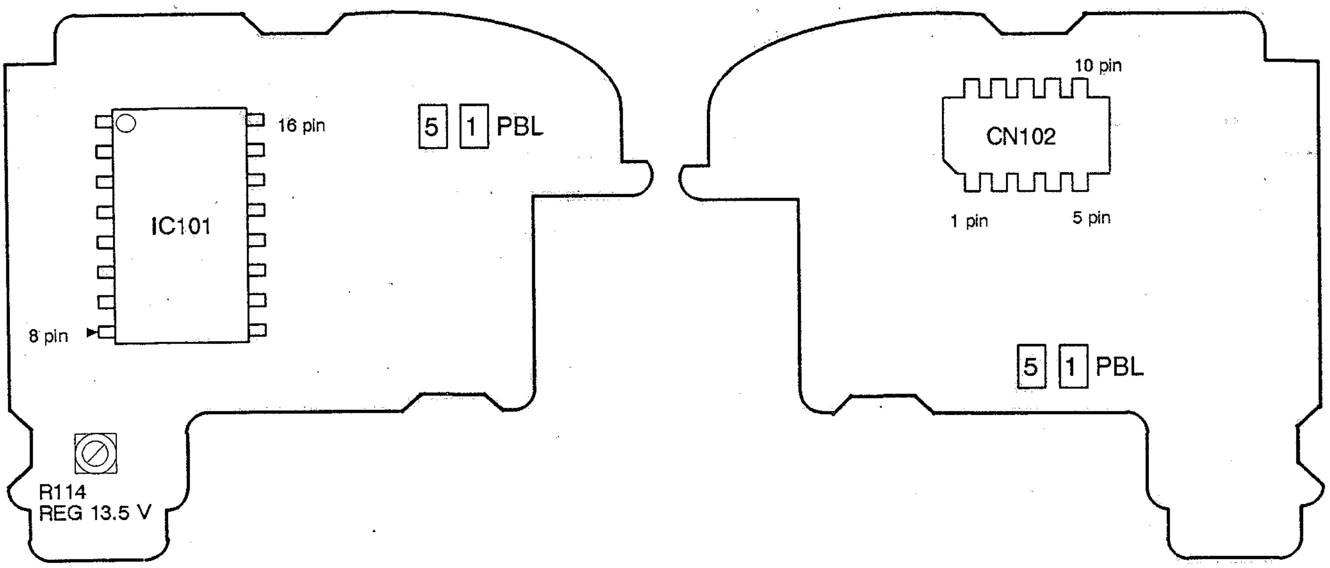
■ ADJUSTMENT ELEMENT LOCATION FOR DECK SECTION

- MAIN-


CN10
TP401
BIAS
TP402
BIAS GND
TP251
CTL PULSE
TP351
C. FG
TP453
REC FM
TP301
D. FG
TP101
PCL
IC1
IC11
0 1 MAIN
TP303
D. PG/FG
TP302
D. PG
TP102
CLOCK OUT
CN2
TP602
A CH1 (F)

■ ADJUSTMENT ELEMENT LOCATION FOR COLOR VIEWFINDER SECTION

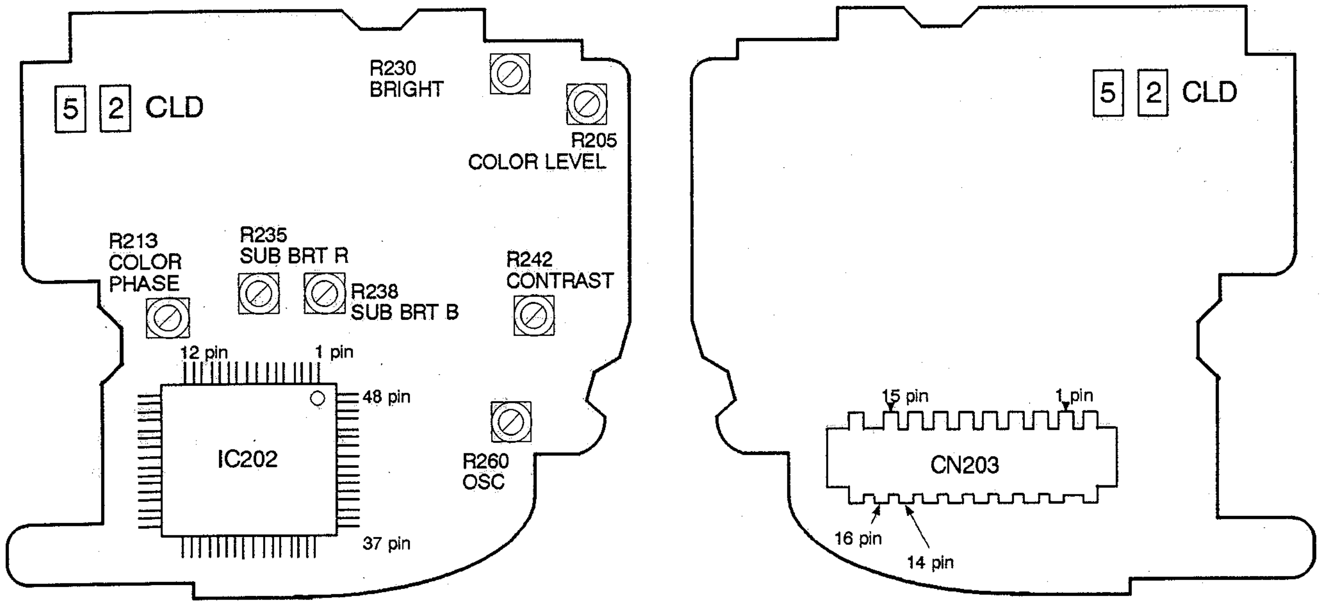
— PBL —



16 pin
5 1 PBL
IC101
8 pin
R114
REG 13.5 V
10 pin
CN102
1 pin
5 pin
5 1 PBL

Fig. 3-2-1 Adjustment element location for PBL board assembly

— CLD —



5 2 CLD
R230
BRIGHT
R205
COLOR LEVEL
R213
COLOR
PHASE
R235
SUB BRT R
R238
SUB BRT B
R242
CONTRAST
12 pin
1 pin
48 pin
IC202
37 pin
R260
OSC
5 2 CLD
15 pin
1 pin
CN203
16 pin
14 pin

Fig. 3-2-2 Adjustment element location for CLD board assembly

3.2 COLOR VIEWFINDER SECTION ADJUSTMENT

Notes: *Unless otherwise specified, all measurement points and adjustment parts are located on CLD board.*

3.2.1 REG 13.5 V

Subject	•–
Mode	•EE
Equipment	•Digital voltmeter
Measurement point	•CN102 pin 9 〔PBL board〕
Adjustment part	•R114 (REG 13.5 V) 〔PBL board〕
Specification	•13.5 ± 0.1 V DC

1) Connect a digital voltmeter to pin 9 of the CN102.
2) Adjust R114 for 13.5 V DC.

3.2.2 OSC

Subject	•–
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC202 pin 37
Adjustment part	•R260 (OSC)
Specification	•"A" = 3.0 ± 0.1 V DC

1) Observe waveform at pin 37 of the IC202.
2) Adjust R260 so that DC level of "A" (between the waveform center and GND, see Fig. 3-2-3) of a waveform becomes 3.0 V DC.

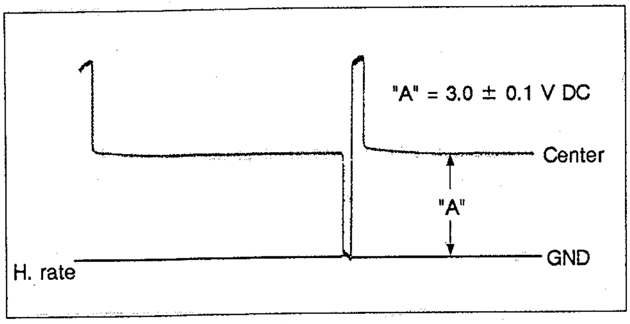


Fig. 3-2-3 OSC

3.2.3 Brightness

Subject	•Alignment tape [MHP-C or MH-C1] •SP stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 16 (G OUT)
Adjustment part	•R230 (BRIGHT)
Specification	•"A" = 4.1 ± 0.1 V (Waveform center to Pedestal)

1) Observe waveform at pin 16 of CN203.
2) Adjust R230 so that level of "A" (between the waveform center and pedestal, see Fig. 3-2-4) of a waveform becomes 4.1 V.

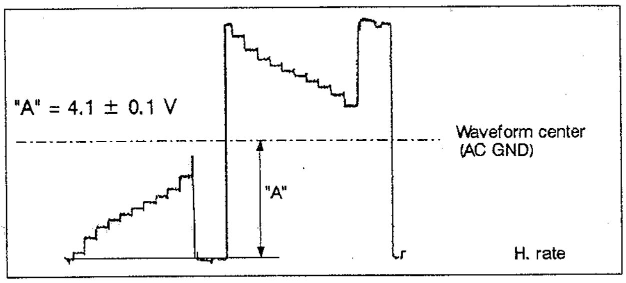


Fig. 3-2-4 Brightness

3.2.4 Contrast

Subject	•Alignment tape [MHP-C or MH-C1] •SP stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 16 (G OUT)
Adjustment part	•R242 (CONTRAST)
Specification	•"A" = 1.4 ± 0.1 V (Waveform center to White)

1) Observe waveform at pin 16 of CN203.
2) Adjust R242 so that level of "A" (between the waveform center and white level of negative waveform, see Fig. 3-2-5) of a waveform becomes 1.4 V.

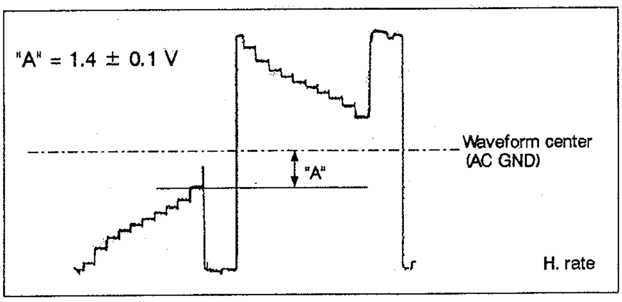


Fig. 3-2-5 Contrast

3.2.5 White balance-1

Subject	•Alignment tape [MHP-C or MH-C1] •SP stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 16 (G OUT) •CN203 pin 14 (B OUT)
Adjustment part	•R238 (SUB BRT B)
Specification	•Equall level "A" ± 0.80 mV

1) Connect the oscilloscope to pin 16 of CN203.
2) Observe waveform and make a note of the level as "A" (see Fig. 3-2-6).
3) Connect the oscilloscope to pin 14 of CN203.
4) Adjust R238 so that pin 14 of CN203 level of "A" is equally to pin 16 of CN203 of the noted "A" level.

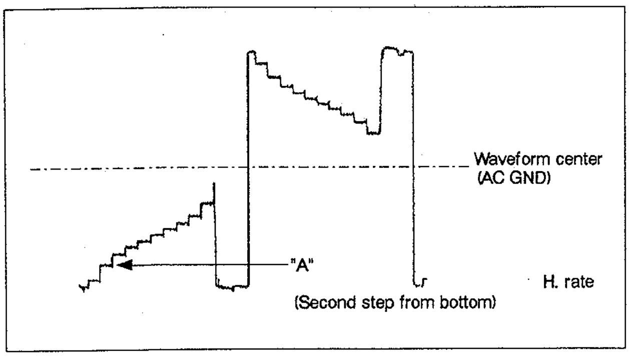


Fig. 3-2-6 White balance-1

3.2.6 White balance-2

Subject	•Alignment tape [MHP-C or MH-C1] •SP stairstep
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 16 (G OUT) •CN203 pin 15 (R OUT)
Adjustment part	•R235 (SUB BRT R)
Specification	•Equal level "A" ± 80 mV

1) Connect the oscilloscope to pin 16 of CN203.
2) Observe waveform and make a note of the level as "A" (see Fig. 3-2-7).
3) Connect the oscilloscope to pin 15 of CN203.
4) Adjust R235 so that pin 15 of CN203 level of "A" is equally to pin 16 of CN202 of the noted "A" level.

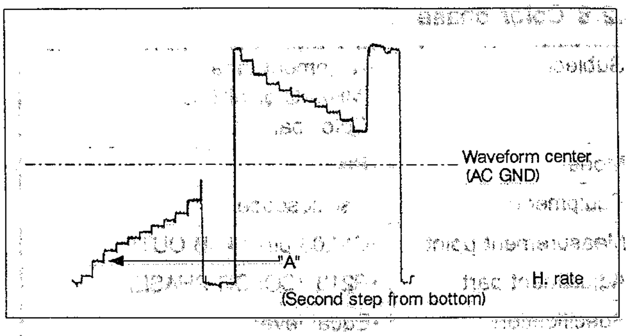


Fig. 3-2-7 White balance-2

3.2.7 Color level

Subject	•Alignment tape [MHP-C or MH-C1] •Color bar
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 14 (B OUT)
Adjustment part	•R205 (COLOR LEVEL)
Specification	•"A" = 1.6 ± 0.1 V (Waveform center to Blue)

1) Observe waveform at pin 14 of CN203.
2) Adjust R205 so that level of "A" (between the waveform center and blue level of negative waveform, see Fig. 3-2-8) of a waveform becomes 1.6 V.

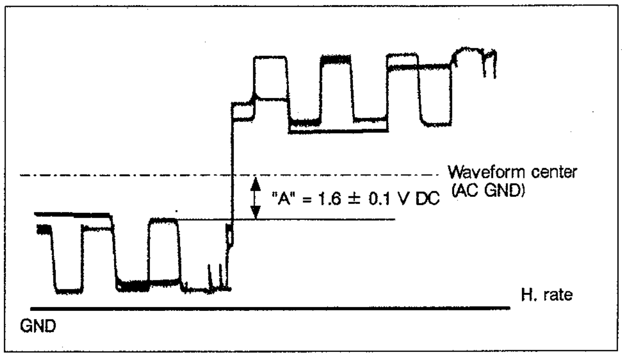


Fig. 3-2-8 Color level

3.2.8 Color phase

Subject	•Alignment tape [MHP-C or MH-C1] •Color bar
Mode	•PB
Equipment	•Oscilloscope
Measurement point	•CN203 pin 14 (B OUT)
Adjustment part	•R213 (COLOR PHASE)
Specification	•Equal level (Cyan and Magenta)

1) Observe waveform at pin 14 of CN203.
2) Adjust R213 so that Cyan and Magenta levels are equally.

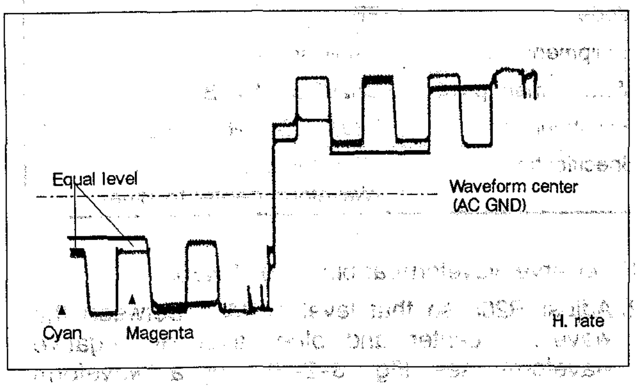


Fig. 3-2-9 Color phase

SECTION 4
CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Schematic diagram values

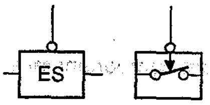
Unless otherwise specified.

1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values in µH, (m: mH).
4) All diodes are 1SS133 or MA165, (refer to parts list).

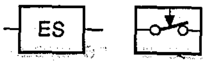
2. Indications

AUX : Active only at high.

$\overline{\text{AUX}}$: Active only at low.

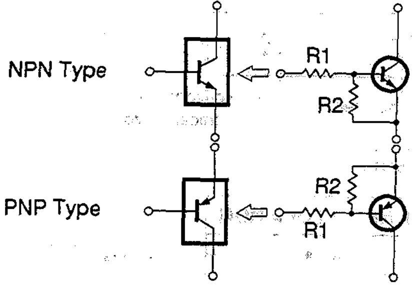


Active only at low for electronic switch.

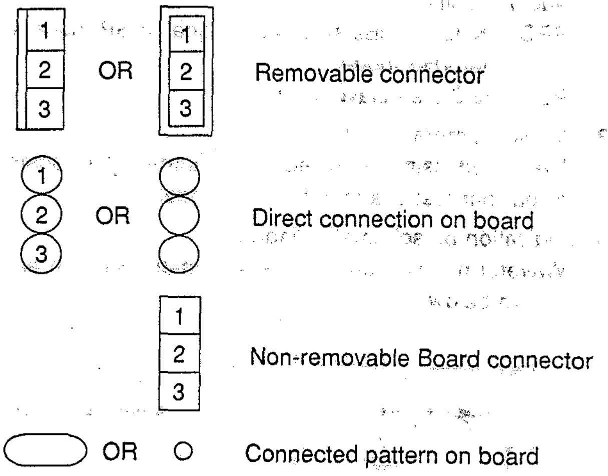


Active only at high for electronic switch.

Digital transistor :
The digital transistor includes built in resistors.
It features small size and high reliability.

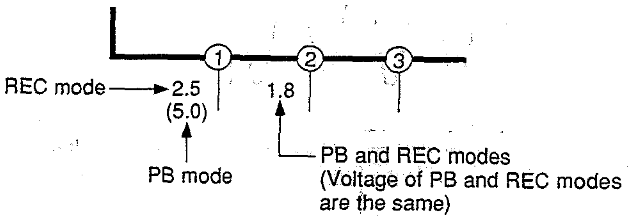

NPN Type
R1
R2
PNP Type
R2
R1

3. Interpreting Connector indications


1
2
3
OR
1
2
3
Removable connector
1
2
3
OR
Direct connection on board
1
2
3
Non-removable Board connector
OR
Connected pattern on board

4. Voltage measurement

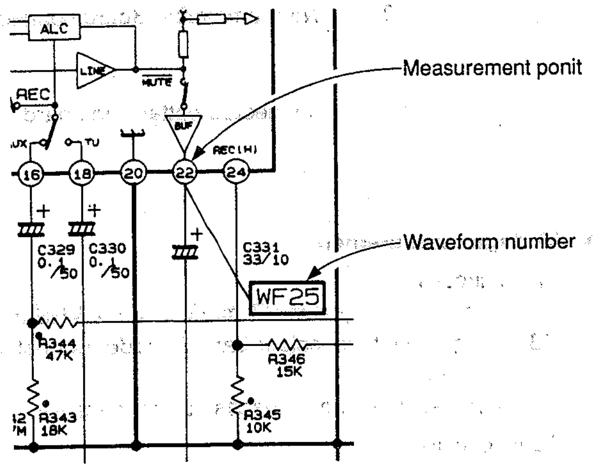
1) Video circuits
   REC: Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
   — : Unmeasurable or unnecessary to measure.
2) Audio circuits
   REC: 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Voltage Indications for REC and PB modes on the schematic diagram are as shown below.


1
2
3
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

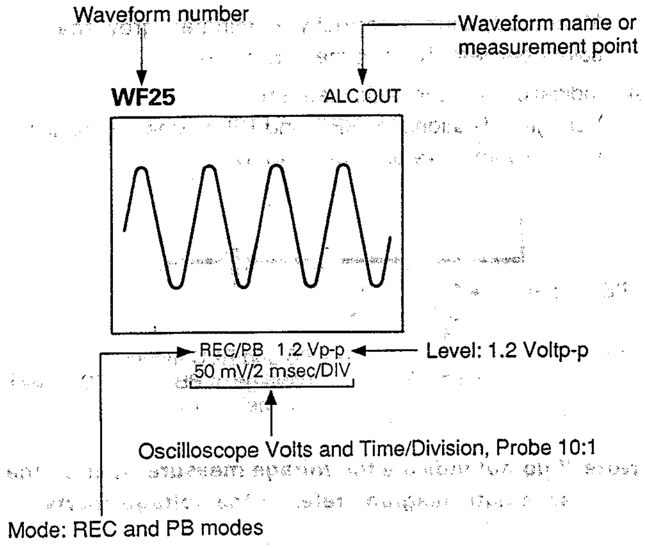
Note: If do not indicate for voltage measurement on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC: Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
2) Audio circuits
   REC: 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.

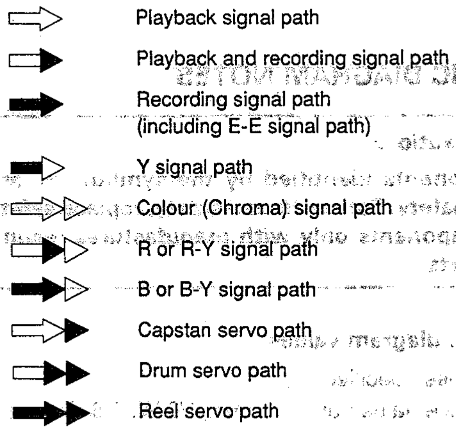

ALC
LINE
MUTE
BUF
REC
TU
REC(H)
16
18
20
22
24
C329 0.1/50
C330 0.1/50
C331 33/10
WF25
R344 47K
R346 15K
R343 18K
R345 10K
Measurement ponit
Waveform number

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
50 mV/2 msec/DIV
Level: 1.2 Voltp-p
Oscilloscope Volts and Time/Division, Probe 10:1
Mode: REC and PB modes

6. Signal path Symbols

The arrows indicate the signal path as follows.


Playback signal path
Playback and recording signal path
Recording signal path (including E-E signal path)
Y signal path
Colour (Chroma) signal path
R or R-Y signal path
B or B-Y signal path
Capstan servo path
Drum servo path
Reel servo path

CIRCUIT BOARD NOTES

1. Colour indications

1) Foil side :
   Foil side patterns are indicated at GREY shading.
2) Component side :
   Component side patterns are indicated at RED shading.

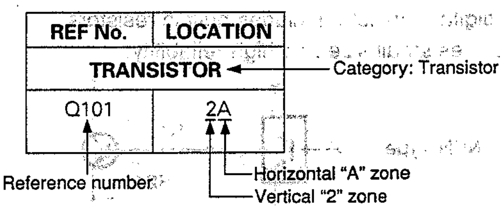
2. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) are indicated.

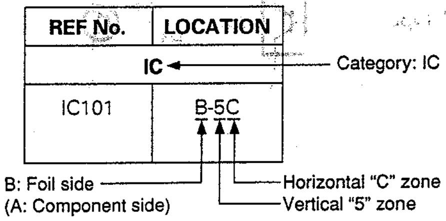
3. Parts location guides

Parts location are indicated by guide scale on the circuit board.

1) Signal pattern :


REF No.
LOCATION
TRANSISTOR
Category: Transistor
Q101
2A
Reference number
Horizontal "A" zone
Vertical "2" zone

2) Double pattern :


REF No.
LOCATION
IC
Category: IC
IC101
B-5C
B: Foil side
(A: Component side)
Horizontal "C" zone
Vertical "5" zone

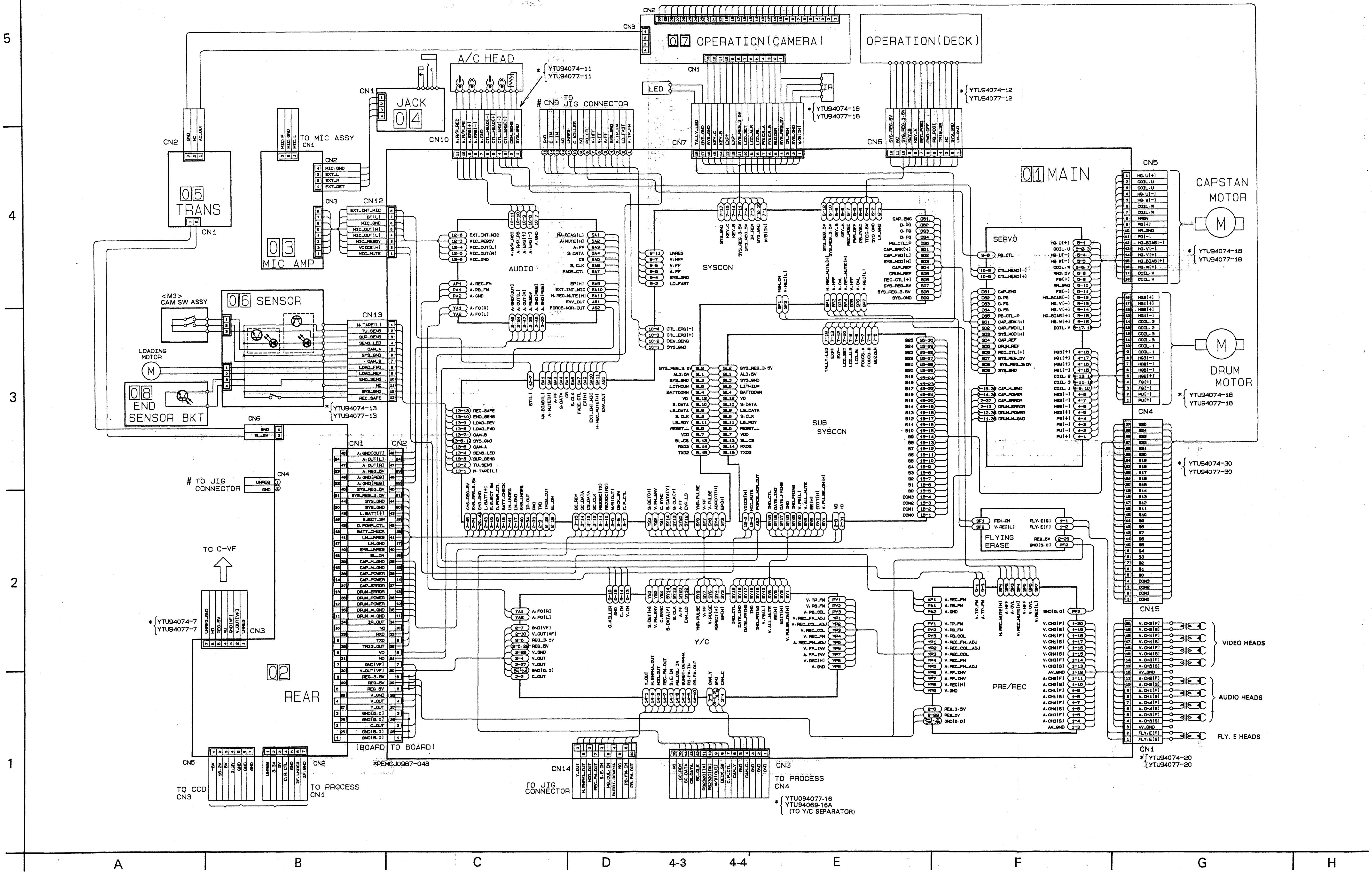
Notes:

1) **For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).**
2) **For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.**

4.1 BOARD INTERCONNECTION (DECK)

NOTES:

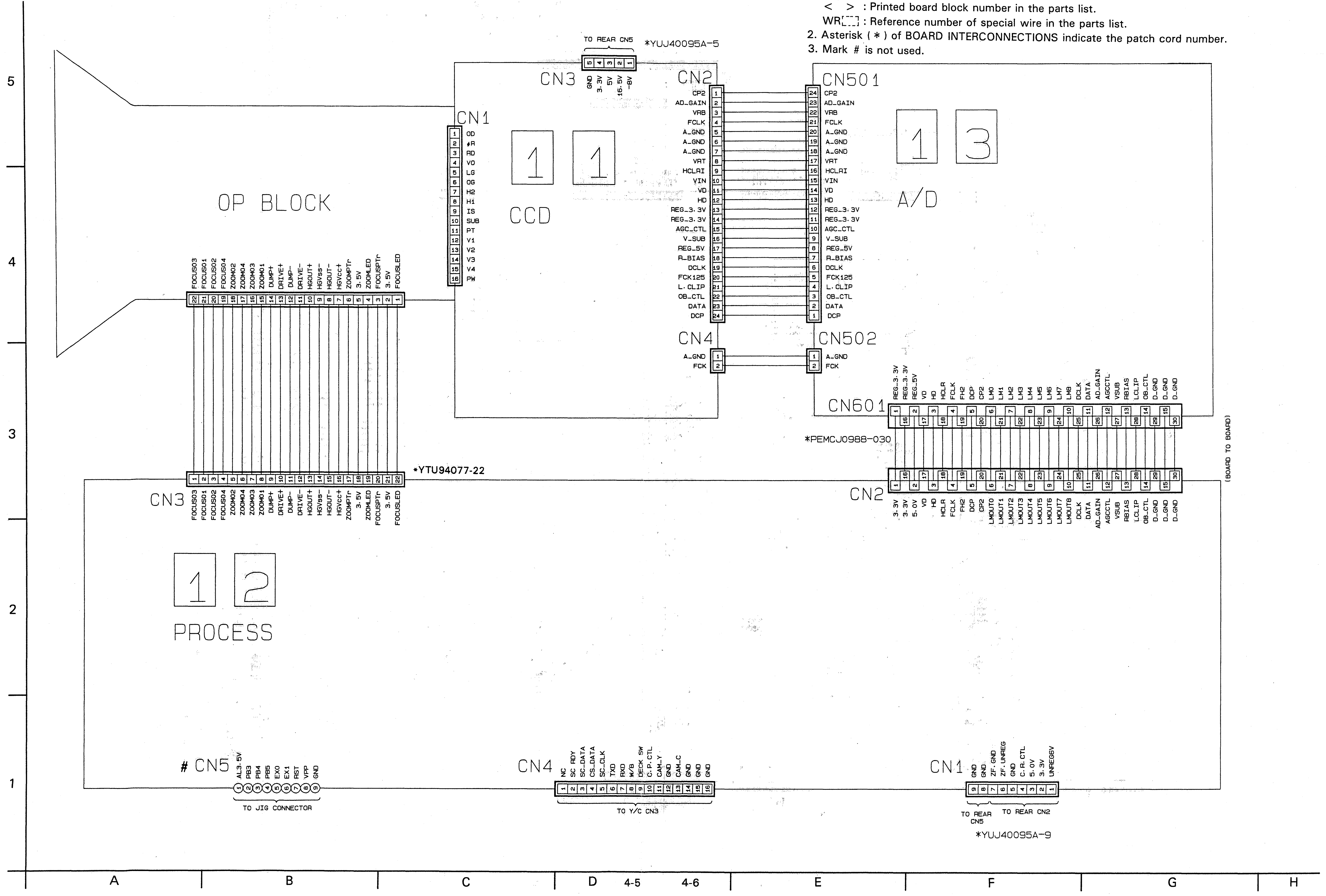
1. < > WR[ ] indications on BOARD INTERCONNECTIONS are as shown below.
   < > : Printed board block number in the parts list.
   WR[ ] : Reference number of special wire in the parts list.
2. Asterisk (*) of BOARD INTERCONNECTIONS indicate the patch cord number.
3. Mark # is not used.


07 OPERATION(CAMERA)
OPERATION(DECK)
A/C HEAD
JACK 04
05 TRANS
03 MIC AMP
TO MIC ASSY CN1
06 SENSOR
<M3> CAM SW ASSY
LOADING MOTOR
08 END SENSOR BKT
01 MAIN
AUDIO
SYSCON
SERVO
SUB SYSCON
FLYING ERASE
Y/C
PRE/REC
02 REAR
(BOARD TO BOARD)
*PEMC0987-048
TO C-VF
# TO JIG CONNECTOR
# CN9 TO JIG CONNECTOR
TO JIG CONNECTOR
TO CCD CN3
TO PROCESS CN1
TO PROCESS CN4
(TO Y/C SEPARATOR)
CAPSTAN MOTOR
DRUM MOTOR
VIDEO HEADS
AUDIO HEADS
FLY. E HEADS
LED
*YTU94074-11 YTU94077-11
*YTU94074-12 YTU94077-12
*YTU94074-18 YTU94077-18
*YTU94074-13 YTU94077-13
*YTU94074-7 YTU94077-7
*YTU94074-30 YTU94077-30
*YTU94074-20 YTU94077-20
*YTU94077-16 YTU94069-16A
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN10
CN12
CN13
CN14
CN15
1
2
3
4
5
A
B
C
D
E
F
G
H

4.2 BOARD INTERCONNECTION (CAMERA)

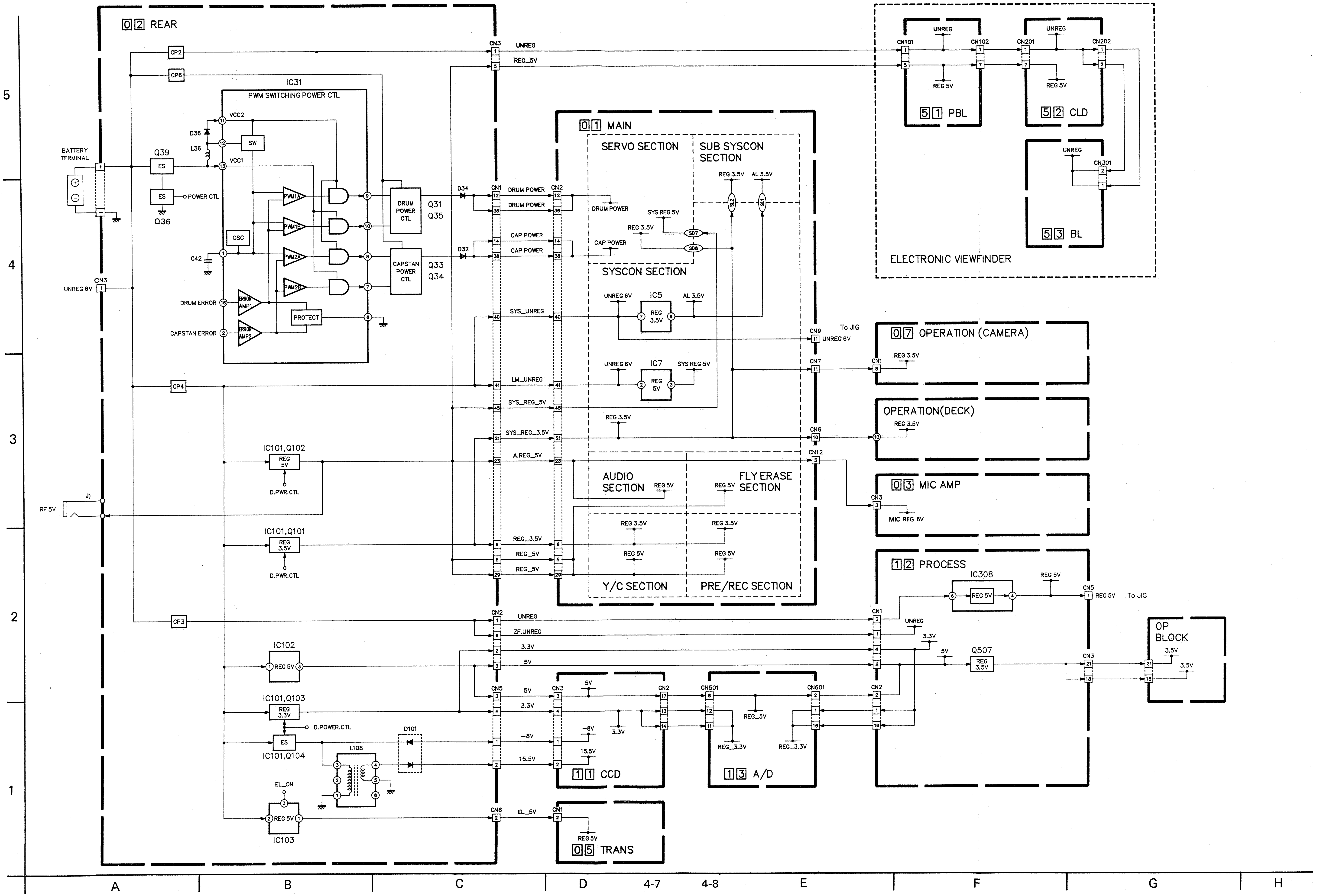
NOTES:

1. < > WR[ ] indications on BOARD INTERCONNECTIONS are as shown below.
   < > : Printed board block number in the parts list.
   WR[ ] : Reference number of special wire in the parts list.
2. Asterisk (*) of BOARD INTERCONNECTIONS indicate the patch cord number.
3. Mark # is not used.

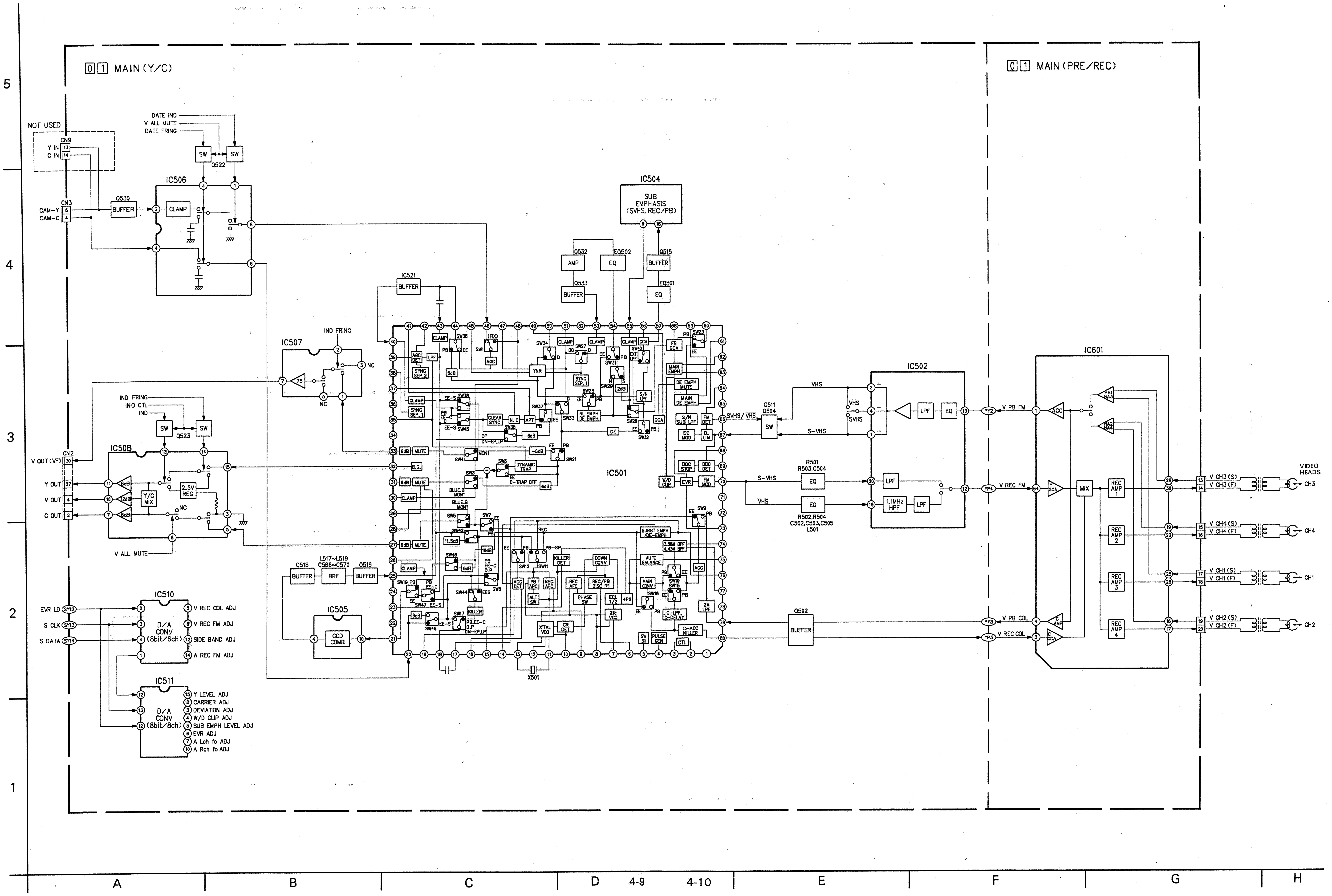


OP BLOCK
CCD 11
CN1: 1 OD, 2 φR, 3 RD, 4 VO, 5 LG, 6 OG, 7 H2, 8 H1, 9 IS, 10 SUB, 11 PT, 12 V1, 13 V2, 14 V3, 15 V4, 16 PW
CN3: 5 GND, 4 3.3V, 3 5V, 2 16.5V, 1 -8V
TO REAR CN5
*YUJ40095A-5
CN2: 1 CP2, 2 AD_GAIN, 3 VRB, 4 FCLK, 5 A_GND, 6 A_GND, 7 A_GND, 8 VRT, 9 HCLRI, 10 VIN, 11 VD, 12 HD, 13 REG_3.3V, 14 REG_3.3V, 15 AGC_CTL, 16 V_SUB, 17 REG_5V, 18 R_BIAS, 19 DCLK, 20 FCK125, 21 L.CLIP, 22 OB_CTL, 23 DATA, 24 DCP
CN4: 1 A_GND, 2 FCK
A/D 13
CN501: 24 CP2, 23 AD_GAIN, 22 VRB, 21 FCLK, 20 A_GND, 19 A_GND, 18 A_GND, 17 VRT, 16 HCLRI, 15 VIN, 14 VD, 13 HD, 12 REG_3.3V, 11 REG_3.3V, 10 AGC_CTL, 9 V_SUB, 8 REG_5V, 7 R_BIAS, 6 DCLK, 5 FCK125, 4 L.CLIP, 3 OB_CTL, 2 DATA, 1 DCP
CN502: 1 A_GND, 2 FCK
CN601: 1 REG_3.3V, 16 REG_3.3V, 2 REG_5V, 17 VD, 3 HD, 18 HCLR, 4 FCLK, 19 FH2, 5 DCP, 20 CP2, 6 LM0, 21 LM1, 7 LM2, 22 LM3, 8 LM4, 23 LM5, 9 LM6, 24 LM7, 10 LM8, 25 DCLK, 11 DATA, 26 AD_GAIN, 12 AGCCTL, 27 VSUB, 13 RBIAS, 28 LCLIP, 14 OB_CTL, 29 D_GND, 15 D_GND, 30 D_GND
*PEMCJ0988-030
(BOARD TO BOARD)
CN2: 1 3.3V, 16 3.3V, 2 5.0V, 17 VD, 3 HD, 18 HCLR, 4 FCLK, 19 FH2, 5 DCP, 20 CP2, 6 LMOUT0, 21 LMOUT1, 7 LMOUT2, 22 LMOUT3, 8 LMOUT4, 23 LMOUT5, 9 LMOUT6, 24 LMOUT7, 10 LMOUT8, 25 DCLK, 11 DATA, 26 AD_GAIN, 12 AGCCTL, 27 VSUB, 13 RBIAS, 28 LCLIP, 14 OB_CTL, 29 D_GND, 15 D_GND, 30 D_GND
OP BLOCK connector: 22 FOCUS03, 21 FOCUS01, 20 FOCUS02, 19 FOCUS04, 18 ZOOM02, 17 ZOOM04, 16 ZOOM03, 15 ZOOM01, 14 DUMP+, 13 DRIVE+, 12 DUMP-, 11 DRIVE-, 10 HGOUT+, 9 HGVss-, 8 HGOUT-, 7 HGVcc+, 6 ZOOMPTr, 5 3.5V, 4 ZOOMLED, 3 FOCUSPTr, 2 3.5V, 1 FOCUSLED
*YTU94077-22
CN3: 1 FOCUS03, 2 FOCUS01, 3 FOCUS02, 4 FOCUS04, 5 ZOOM02, 6 ZOOM04, 7 ZOOM03, 8 ZOOM01, 9 DUMP+, 10 DRIVE+, 11 DUMP-, 12 DRIVE-, 13 HGOUT+, 14 HGVss-, 15 HGOUT-, 16 HGVcc+, 17 ZOOMPTr, 18 3.5V, 19 ZOOMLED, 20 FOCUSPTr, 21 3.5V, 22 FOCUSLED
PROCESS 12
# CN5: 1 AL3.5V, 2 PB3, 3 PB4, 4 PB5, 5 EXO, 6 EX1, 7 RST, 8 VPP, 9 GND
TO JIG CONNECTOR
CN4: 1 NC, 2 SC RDY, 3 SC_DATA, 4 CS_DATA, 5 SC_CLK, 6 TXD, 7 RXD, 8 W/B, 9 DECK SW, 10 C.P.CTL, 11 CAM_Y, 12 GND, 13 CAM_C, 14 GND, 15 GND, 16 GND
TO Y/C CN3
CN1: 9 GND, 8 GND, 7 ZF.GND, 6 ZF.UNREG, 5 GND, 4 C.R.CTL, 3 5.0V, 2 3.3V, 1 UNREG6V
TO REAR CN5
TO REAR CN2
*YUJ40095A-9
5
4
3
2
1
A
B
C
D
E
F
G
H

4.3 POWER SYSTEM BLOCK DIAGRAM

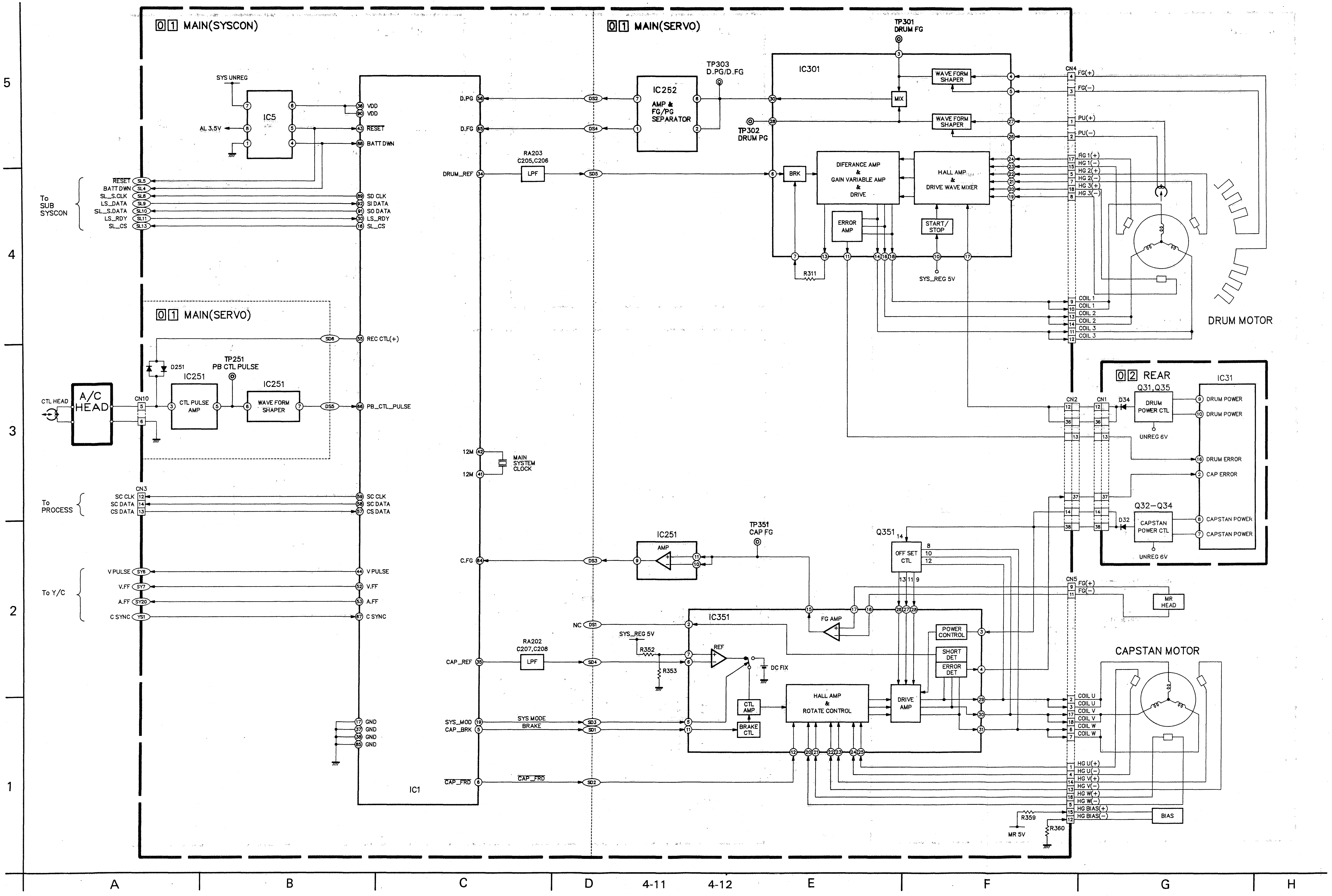

02 REAR
BATTERY TERMINAL
+
−
Q39
ES
ES
POWER CTL
Q36
CP2
CP6
CP4
CP3
CN3
UNREG 6V
1
IC31
PWM SWITCHING POWER CTL
VCC2
VCC1
D36
L36
SW
OSC
C42
PWM1A
PWM1B
PWM2A
PWM2B
DRUM ERROR
CAPSTAN ERROR
ERROR AMP1
ERROR AMP2
PROTECT
DRUM POWER CTL
Q31
Q35
CAPSTAN POWER CTL
Q33
Q34
D34
D32
CN3
UNREG
REG_5V
CN1
CN2
DRUM POWER
CAP POWER
SYS_UNREG
LM_UNREG
SYS_REG_5V
SYS_REG_3.5V
A.REG_5V
REG_3.5V
REG_5V
IC101,Q102
REG 5V
D.PWR.CTL
J1
RF 5V
IC101,Q101
REG 3.5V
D.PWR.CTL
UNREG
ZF.UNREG
3.3V
5V
IC102
REG 5V
IC101,Q103
REG 3.3V
D.POWER.CTL
ES
IC101,Q104
D101
L108
−8V
15.5V
EL_ON
REG 5V
IC103
CN5
CN6
EL_5V
01 MAIN
SERVO SECTION
SUB SYSCON SECTION
REG 3.5V
AL 3.5V
SL2
SL1
DRUM POWER
SYS REG 5V
REG 3.5V
SD7
SD8
CAP POWER
SYSCON SECTION
UNREG 6V
IC5
REG 3.5V
AL 3.5V
IC7
REG 5V
SYS REG 5V
REG 3.5V
AUDIO SECTION
REG 5V
FLY ERASE SECTION
REG 5V
REG 3.5V
REG 3.5V
REG 5V
REG 5V
Y/C SECTION
PRE/REC SECTION
CN9
To JIG
UNREG 6V
CN7
CN6
CN12
07 OPERATION (CAMERA)
CN1
REG 3.5V
OPERATION(DECK)
REG 3.5V
03 MIC AMP
CN3
MIC REG 5V
ELECTRONIC VIEWFINDER
51 PBL
CN101
CN102
UNREG
REG 5V
52 CLD
CN201
CN202
UNREG
REG 5V
53 BL
UNREG
CN301
12 PROCESS
IC308
REG 5V
REG 5V
CN5
REG 5V
To JIG
CN1
UNREG
3.3V
5V
Q507
REG 3.5V
CN3
CN2
OP BLOCK
3.5V
3.5V
11 CCD
CN3
5V
−8V
3.3V
15.5V
CN2
13 A/D
CN501
CN601
REG_5V
REG_3.3V
REG_3.3V
05 TRANS
CN1
REG 5V
1
2
3
4
5
A
B
C
D
E
F
G
H

4.4 Y/C BLOCK DIAGRAM



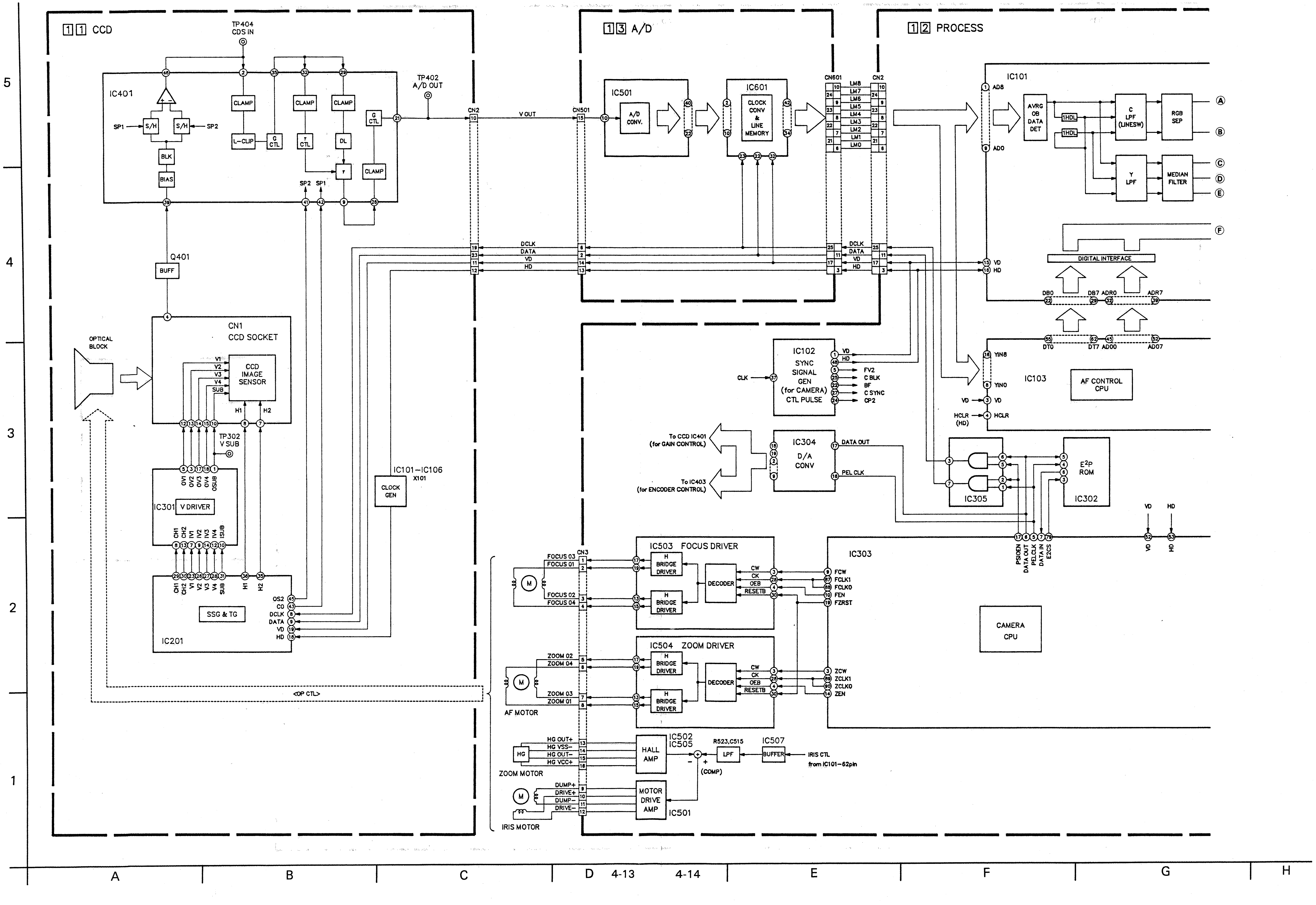
01 MAIN (Y/C)
01 MAIN (PRE/REC)
NOT USED
CN9
Y IN
C IN
CN3
CAM-Y
CAM-C
Q530
BUFFER
DATE IND
V ALL MUTE
DATE FRING
SW
SW
Q522
IC506
CLAMP
IC504
SUB EMPHASIS (SVHS, REC/PB)
Q532
AMP
EQ502
EQ
Q515
BUFFER
Q533
BUFFER
EQ501
EQ
IC521
BUFFER
IND FRING
IC507
75
NC
IND FRING
IND CTL
IND
SW
SW
Q523
IC508
CN2
V OUT (VF)
Y OUT
V OUT
C OUT
6dB
12dB
6dB
Y/C MIX
2.5V REG
NC
V ALL MUTE
L517~L519
C566~C570
Q518
BUFFER
BPF
Q519
BUFFER
IC505
CCD COMB
EVR LD
S CLK
S DATA
SY12
SY13
SY14
IC510
D/A CONV (8bit/6ch)
V REC COL ADJ
V REC FM ADJ
SIDE BAND ADJ
A REC FM ADJ
IC511
D/A CONV (8bit/8ch)
Y LEVEL ADJ
CARRIER ADJ
DEVIATION ADJ
W/D CLIP ADJ
SUB EMPH LEVEL ADJ
EVR ADJ
A Lch fo ADJ
A Rch fo ADJ
IC501
AGC DET
LPF
SYNC SEP.2
CLAMP
SYNC SEP.1
SW38
(FIX)
SW1
AGC
6dB
YNR
SW34
SW27
SYNC SEP.1
SW31
SW29
2dB
SW40
EXT LPF
GCA
FB GCA
SW23
MAIN EMPH
DE EMPH MUTE
MAIN DE EMPH
S/N LPF
SW28
NL EMPH DE EMPH
SW26
SW32
DE
SW36
SW45
EE-S
PB EE-C D
CLEAR SYNC
N.C
APT
SW37
SW33
SW35
DP DN-EP,LP
-6dB
-8dB
SW21
SW4
MON1
SW6
DYNAMIC TRAP
D-TRAP OFF
SW3
BLUE.B MON1
B.G.
MUTE
S/N SUB LPF
FM DET
DE MOD
D. LIM
DOC STOP
DOC DET
W/D CLIP
EVR
FM MOD
SW9
SW5
SW7
SW42
11.5dB
10dB
REC
PB-SP
SW12
SW11
KILLER DET
DOWN CONV
BURST EMPH /DE-EMPH
3.58M BPF 4.43M BPF
AUTO BALANCE
ACC
SW46
8dB
SW8
PB EE-C D.P
SW19
SW47
EE-S
SW44
EES
KILLER
ACC DET
PB APC
REC AFC
REC AFC
REC/PB DISC R1
ALT SW
PHASE SW
ECL 1/2
4PG
2fc VCO
MAIN CONV
SW10 SW15
SW16
C-LPF. C-DELAY
2M LPF
SW17
PB.EE-C D.P DN-EP,LP
SW48
X'TAL VCO
CR DET
SW 30
PULSE GEN
C-ACC KILLER
CTL
X501
SVHS/VHS
Q511
Q504
SW
VHS
S-VHS
IC502
LPF
EQ
R501
R503,C504
EQ
EQ
R502,R504
C502,C503,C505
L501
1.1MHz HPF
Q502
BUFFER
PY2
V PB FM
YP4
V REC FM
PY3
V PB COL
YP3
V REC COL
IC601
AGC
HA1 HA3
HA2 HA4
Y GCA
MIX
REC AMP 1
REC AMP 2
REC AMP 3
REC AMP 4
C AMP
C GCA
V CH3 (S)
V CH3 (F)
V CH4 (S)
V CH4 (F)
V CH1 (S)
V CH1 (F)
V CH2 (S)
V CH2 (F)
VIDEO HEADS
CH3
CH4
CH1
CH2
1
2
3
4
5
A
B
C
D
E
F
G
H

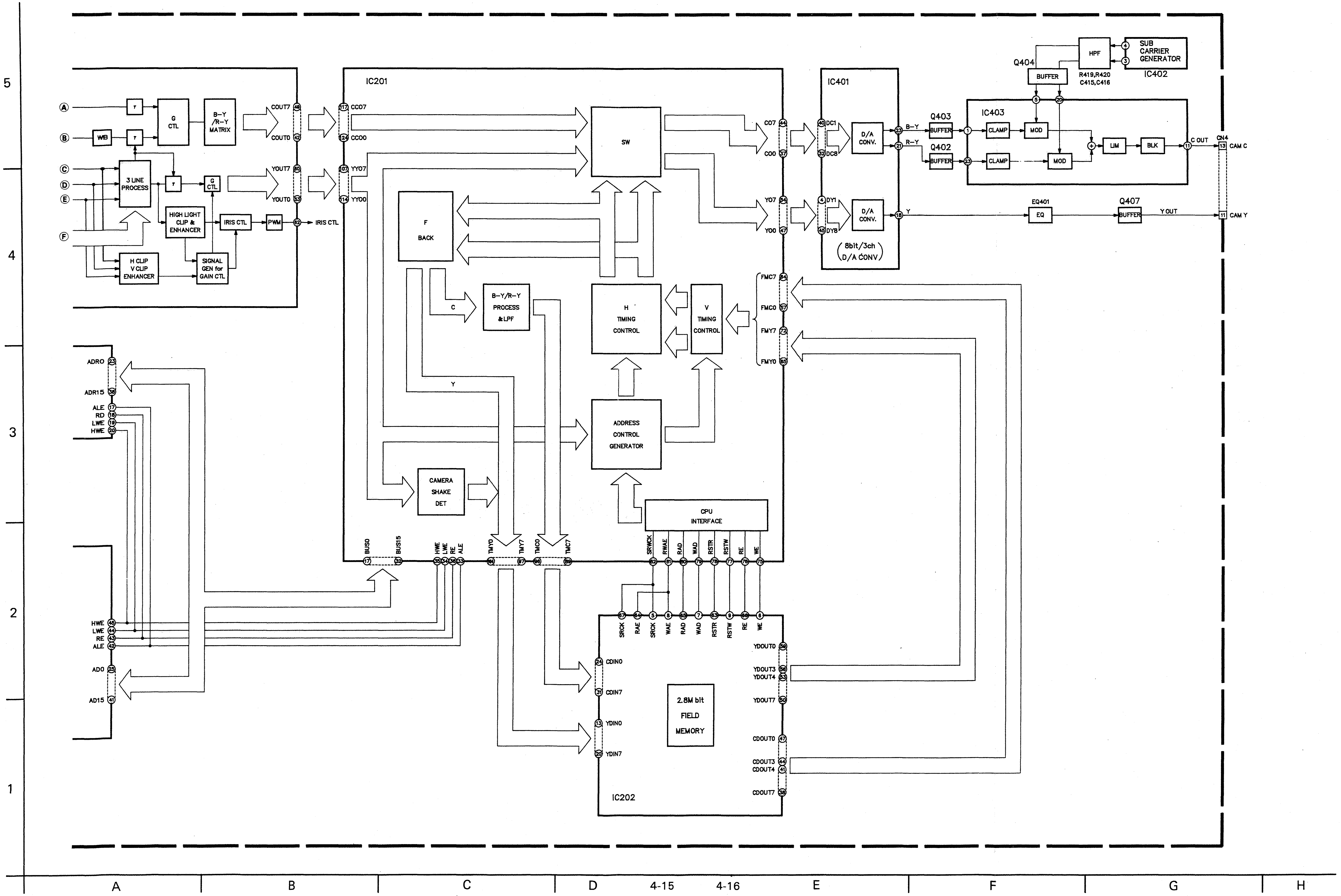
4.5 SYSCON/SERVO BLOCK DIAGRAM



01 MAIN(SYSCON)
01 MAIN(SERVO)
SYS UNREG
IC5
AL 3.5V
VDD
VDD
RESET
BATT DWN
To SUB SYSCON
RESET SL5
BATT DWN SL4
SL_S.CLK SL8
LS_DATA SL9
SL_S.DATA SL10
LS_RDY SL11
SL_CS SL13
SD CLK
SI DATA
SO DATA
LS_RDY
SL_CS
D.PG
D.FG
DRUM_REF
RA203
C205,C206
LPF
DS2
DS4
SD5
TP303
D.PG/D.FG
IC252
AMP & FG/PG SEPARATOR
TP301
DRUM FG
IC301
MIX
WAVE FORM SHAPER
WAVE FORM SHAPER
TP302
DRUM PG
BRK
DIFERANCE AMP & GAIN VARIABLE AMP & DRIVE
HALL AMP & DRIVE WAVE MIXER
ERROR AMP
START/STOP
R311
SYS_REG 5V
CN4
FG(+)
FG(−)
PU(+)
PU(−)
HG 1(+)
HG 1(−)
HG 2(+)
HG 2(−)
HG 3(+)
HG 3(−)
COIL 1
COIL 1
COIL 2
COIL 2
COIL 3
COIL 3
DRUM MOTOR
REC CTL(+)
SD6
D251
TP251
PB CTL PULSE
IC251
CTL PULSE AMP
IC251
WAVE FORM SHAPER
DS5
PB_CTL_PULSE
CTL HEAD
A/C HEAD
CN10
12M
12M
MAIN SYSTEM CLOCK
To PROCESS
CN3
SC CLK
SC DATA
CS DATA
SC CLK
SC DATA
CS DATA
To Y/C
V PULSE SY6
V.FF SY7
A.FF SY20
C SYNC YS1
V PULSE
V.FF
A.FF
C SYNC
02 REAR
IC31
Q31,Q35
DRUM POWER CTL
D34
CN2
CN1
DRUM POWER
DRUM POWER
UNREG 6V
DRUM ERROR
CAP ERROR
Q32−Q34
CAPSTAN POWER CTL
D32
CAPSTAN POWER
CAPSTAN POWER
UNREG 6V
C.FG
DS3
IC251
AMP
TP351
CAP FG
Q351
OFF SET CTL
CN5
FG(+)
FG(−)
MR HEAD
IC351
NC
DS1
FG AMP
POWER CONTROL
SHORT DET
ERROR DET
SYS_REG 5V
R352
R353
REF
DC FIX
CAP_REF
RA202
C207,C208
LPF
SD4
CTL AMP
BRAKE CTL
HALL AMP & ROTATE CONTROL
DRIVE AMP
CAPSTAN MOTOR
COIL U
COIL U
COIL V
COIL V
COIL W
COIL W
SYS_MOD
CAP_BRK
SYS MODE
BRAKE
SD3
SD1
GND
GND
GND
GND
HG U(+)
HG U(−)
HG V(+)
HG V(−)
HG W(+)
HG W(−)
HG BIAS(+)
HG BIAS(−)
BIAS
CAP_FRD
CAP_FRD
SD2
IC1
R359
MR 5V
R360
5
4
3
2
1
A
B
C
D
E
F
G
H

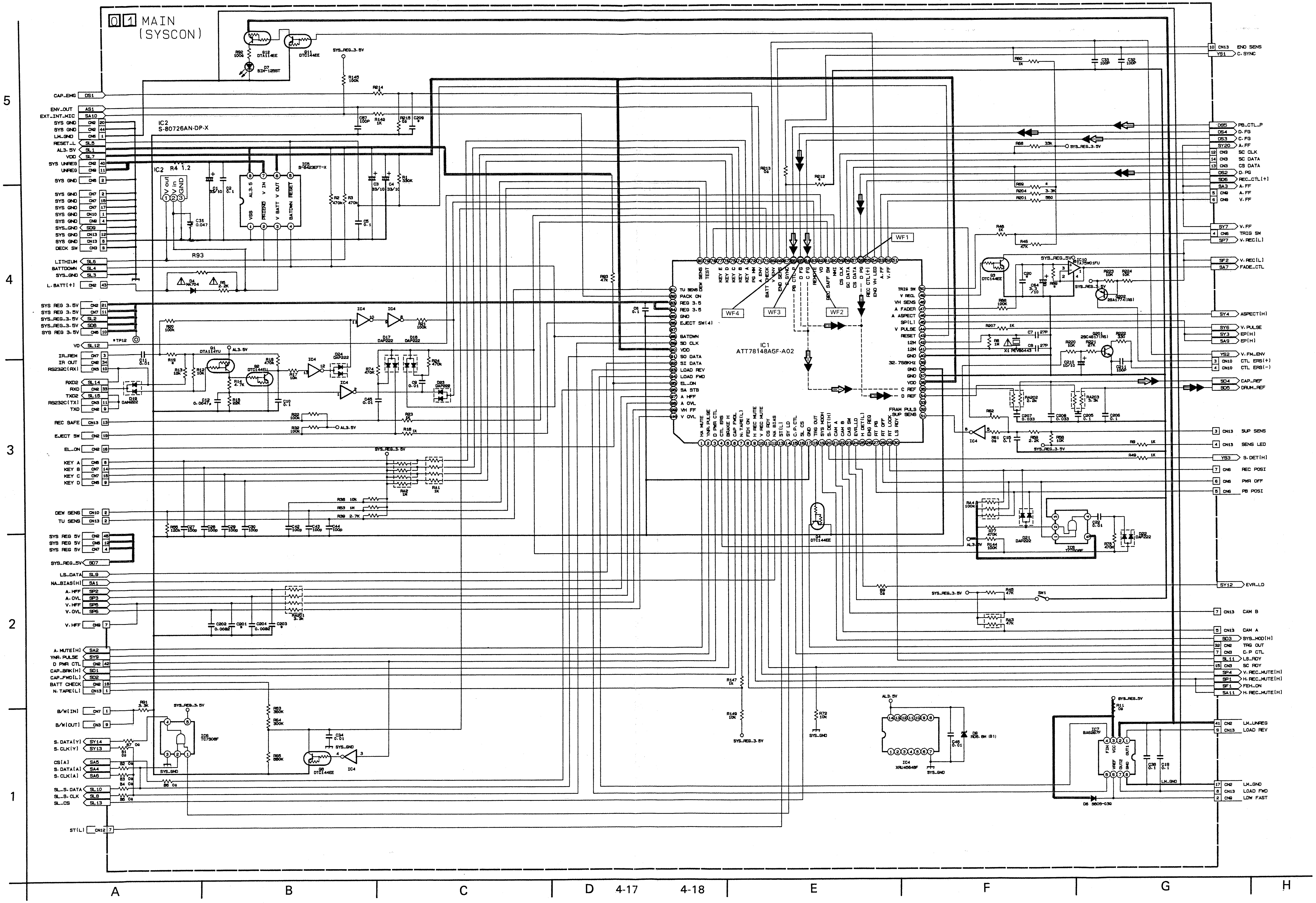
4.6 CAMERA BLOCK DIAGRAM


11 CCD
13 A/D
12 PROCESS
TP404 CDS IN
TP402 A/D OUT
IC401
SP1
SP2
S/H
BLK
BIAS
CLAMP
L-CLIP
G CTL
γ CTL
DL
γ
Q401
BUFF
OPTICAL BLOCK
CN1 CCD SOCKET
CCD IMAGE SENSOR
V1 V2 V3 V4 SUB
H1 H2
TP302 V SUB
IC301 V DRIVER
IC201
SSG & TG
OS2 CO DCLK DATA VD HD
IC101–IC106 X101
CLOCK GEN
CN2
CN501
V OUT
DCLK DATA VD HD
IC501
A/D CONV.
IC601
CLOCK CONV & LINE MEMORY
CN601
LM8 LM7 LM6 LM5 LM4 LM3 LM2 LM1 LM0
IC101
AD8 AD0
AVRG OB DATA DET
1HDL
C LPF (LINESW)
RGB SEP
Y LPF
MEDIAN FILTER
A B C D E F
DIGITAL INTERFACE
DB0 DB7 ADR0 ADR7
DT0 DT7 AD00 AD07
IC102 SYNC SIGNAL GEN (for CAMERA) CTL PULSE
CLK
FV2 C BLK BF C SYNC CP2
IC103
YIN8 YIN0
HCLR (HD)
AF CONTROL CPU
IC304 D/A CONV
To CCD IC401 (for GAIN CONTROL)
To IC403 (for ENCODER CONTROL)
DATA OUT
PEL CLK
IC305
E2P ROM
IC302
PSIOEN DATA OUT PEL CLK DATA IN E2CS
IC303
CAMERA CPU
CN3
IC503 FOCUS DRIVER
FOCUS 03 FOCUS 01 FOCUS 02 FOCUS 04
H BRIDGE DRIVER
DECODER
CW CK OEB RESETB
FCW FCLK1 FCLK0 FEN FZRST
IC504 ZOOM DRIVER
ZOOM 02 ZOOM 04 ZOOM 03 ZOOM 01
ZCW ZCLK1 ZCLK0 ZEN
AF MOTOR
<OP CTL>
HG
HG OUT+ HG VSS− HG OUT− HG VCC+
ZOOM MOTOR
IC502 IC505
HALL AMP
R523,C515
LPF
(COMP)
IC507 BUFFER
IRIS CTL from IC101−62pin
DUMP+ DRIVE+ DUMP− DRIVE−
MOTOR DRIVE AMP
IC501
IRIS MOTOR
M
1 2 3 4 5
A B C D E F G H


IC201
IC202
IC401
IC402
IC403
Q402
Q403
Q404
Q407
EQ401
CN4
A
B
C
D
E
F
γ
G CTL
B–Y /R–Y MATRIX
WB
3 LINE PROCESS
HIGH LIGHT CLIP & ENHANCER
IRIS CTL
PWM
IRIS CTL
H CLIP V CLIP ENHANCER
SIGNAL GEN for GAIN CTL
COUT7
COUT0
YOUT7
YOUT0
CCO7
CCO0
YYO7
YYO0
SW
F BACK
B–Y/R–Y PROCESS &LPF
C
Y
H TIMING CONTROL
V TIMING CONTROL
ADDRESS CONTROL GENERATOR
CAMERA SHAKE DET
CPU INTERFACE
CO7
CO0
YO7
YO0
FMC7
FMC0
FMY7
FMY0
DC1
DC8
DY1
DY8
D/A CONV.
(8bit/3ch D/A CONV)
B–Y
R–Y
BUFFER
CLAMP
MOD
LIM
BLK
C OUT
CAM C
Y
EQ
Y OUT
CAM Y
HPF
SUB CARRIER GENERATOR
R419,R420 C415,C416
ADR0
ADR15
ALE
RD
LWE
HWE
HWE
LWE
RE
ALE
AD0
AD15
BUS0
BUS15
HWE
LWE
RE
ALE
TMY0
TMY7
TMC0
TMC7
SRWCK
RWAE
RAD
WAD
RSTR
RSTW
RE
WE
SRCK
RAE
SRCK
WAE
RAD
WAD
RSTR
RSTW
RE
WE
CDIN0
CDIN7
YDIN0
YDIN7
YDOUT0
YDOUT3
YDOUT4
YDOUT7
CDOUT0
CDOUT3
CDOUT4
CDOUT7
2.8M bit FIELD MEMORY
1
2
3
4
5
A
B
C
D
E
F
G
H

4.7 SYSCON SCHEMATIC DIAGRAM

NOTE: Mark ∗ is not used.

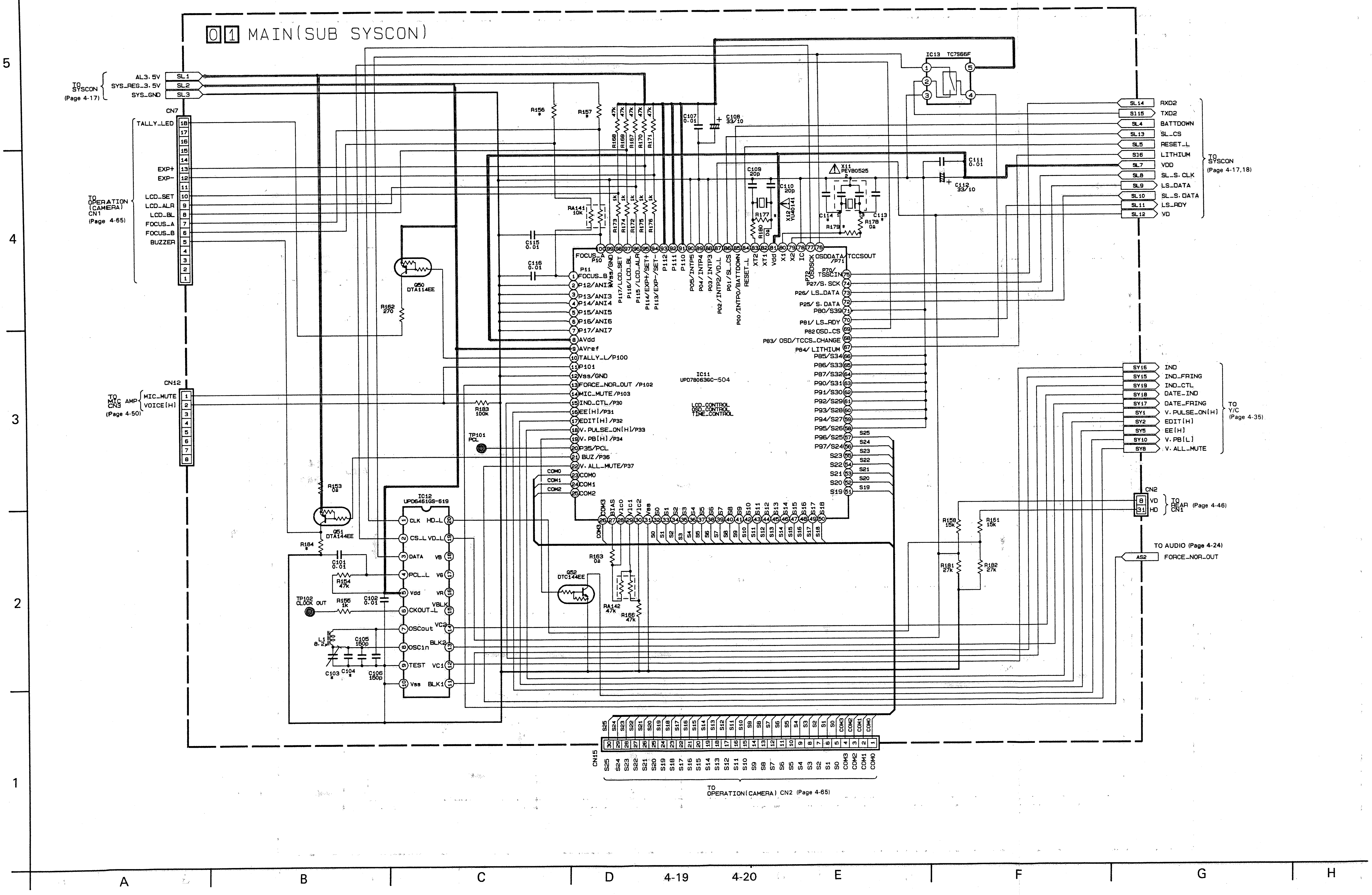


01 MAIN (SYSCON)
IC1 ATT78148AGF-A02
IC2 S-80726AN-DP-X
IC3 S-8423EFT-X
IC4 XRU4584BF
IC5 TC7S08F
IC7 BA6287F
IC10 TA75W01FU
CAP_EMG
ENV_OUT
EXT_INT_MIC
SYS GND
LM_GND
RESET_L
AL3.5V
VDD
SYS UNREG
UNREG
LITHIUM
BATTDOWN
SYS_GND
L.BATT(+)
SYS REG 3.5V
VD
IR_REM
IR OUT
RS232C(RX)
RXD2
RXD
TXD2
RS232C(TX)
TXD
REC SAFE
EJECT SW
EL_ON
KEY A
KEY B
KEY C
KEY D
DEW SENS
TU SENS
SYS REG 5V
SYS_REG_5V
LS_DATA
NA_BIAS(H)
A.HFF
A.OVL
V.HFF
V.OVL
A.MUTE(H)
YNR.PULSE
D PWR CTL
CAP_BRK(H)
CAP_FWD(L)
BATT CHECK
N.TAPE(L)
B/W(IN)
B/W(OUT)
S.DATA(Y)
S.CLK(Y)
CS(A)
S.DATA(A)
S.CLK(A)
SL_S.DATA
SL_S.CLK
SL_CS
ST(L)
END SENS
C.SYNC
PB_CTL_P
D.FG
C.FG
A.FF
SC CLK
SC DATA
CS DATA
D.PG
REC_CTL(+)
V.FF
TRIG SW
V.REC(L)
FADE_CTL
ASPECT(H)
V.PULSE
EP(H)
V.FM_ENV
CTL ERS(+)
CTL ERS(-)
CAP_REF
DRUM_REF
SUP SENS
SENS LED
S.DET(H)
REC POSI
PWR OFF
PB POSI
EVR_LD
CAM B
CAM A
SYS_MOD(H)
TRG OUT
C.P CTL
LS_RDY
SC RDY
V.REC_MUTE(H)
H.REC_MUTE(H)
FEH_ON
LM_UNREG
LOAD REV
LM_GND
LOAD FWD
LOW FAST
WF1
WF2
WF3
WF4
X1 PEV8043
D4 MA704
D7 SIP-1255T
D8 RD5.6M(B1)
D6 SB05-03Q
D17 DAP222
D18 DAP222
D19 DAN222
D21 DAP222
D22 DAP222
D23 DAP222
D24 DAP222
Q1 DTA114YU
Q2 DTC144EU
Q4 DTC144EE
Q6 DTC144EE
Q8 DTC144EE
Q11 DTC144EE
Q12 DTA114EE
Q201 2SC4617(RS)
Q202 2SA1774(RS)
32.768KHz
12M

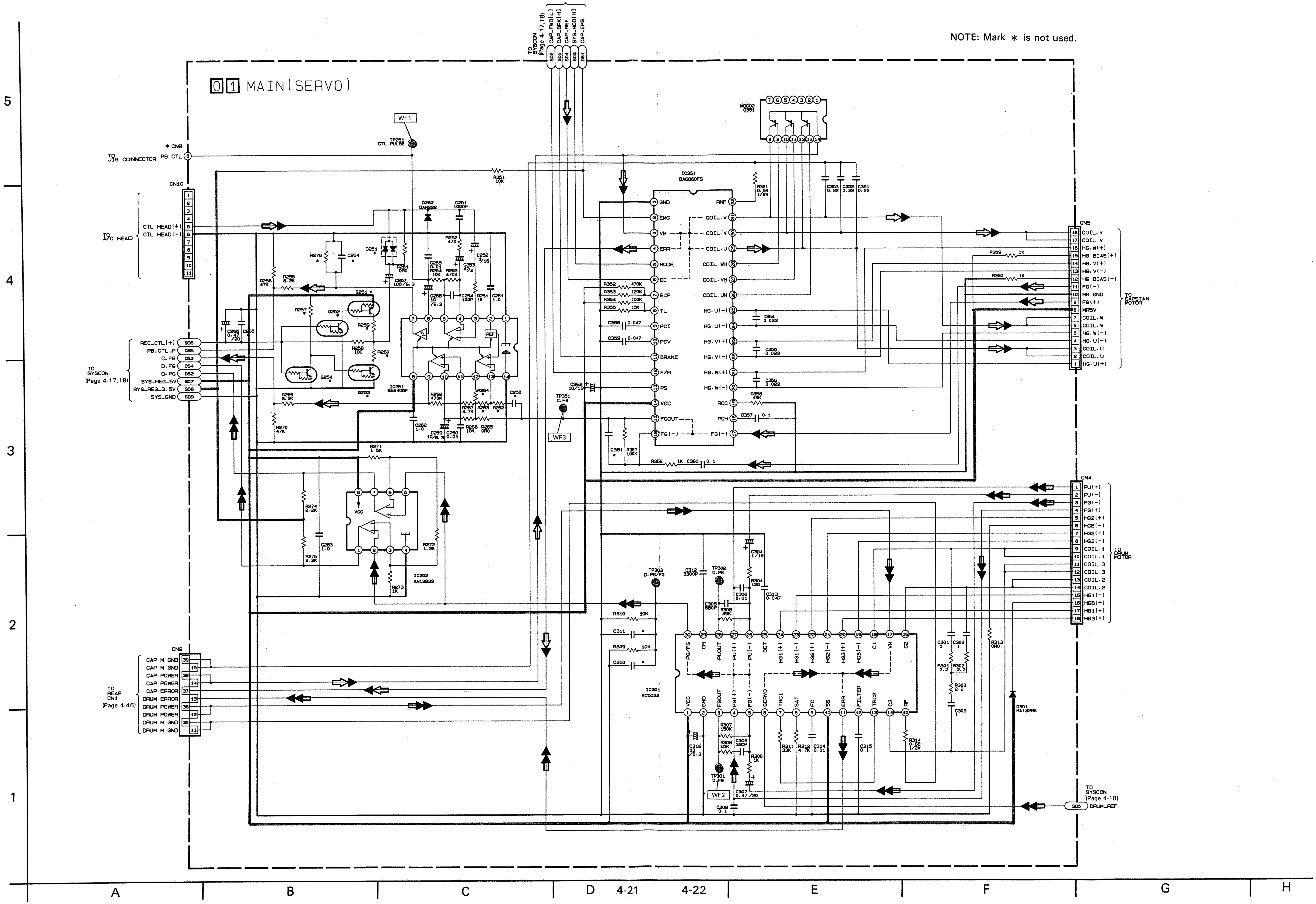
A
B
C
D
E
F
G
H
1
2
3
4
5

4.8 SUB SYSCON SCHEMATIC DIAGRAM

NOTE: Mark * is not used.


01 MAIN(SUB SYSCON)
TO SYSCON (Page 4-17)
AL3.5V SL1
SYS_REG_3.5V SL2
SYS_GND SL3
CN7
TALLY_LED
EXP+
EXP-
LCD_SET
LCD_ALR
LCD_BL
FOCUS_A
FOCUS_B
BUZZER
TO OPERATION (CAMERA) CN1 (Page 4-65)
CN12
TO MIC AMP CN3 (Page 4-50)
MIC_MUTE
VOICE(H)
IC13 TC7S66F
IC11 UPD780836GC-504
LCD_CONTROL
OSD_CONTROL
TIME_CONTROL
IC12 UPD6461GS-619
Q50 DTA114EE
Q51 DTA144EE
Q52 DTC144EE
X11 PEVB0525
X12 YU40141
TP101 PCL
TP102 CLOCK OUT
L1 8.2μ
SL14 RXD2
SI15 TXD2
SL4 BATTDOWN
SL13 SL_CS
SL5 RESET_L
SI6 LITHIUM
SL7 VDD
SL8 SL_S.CLK
SL9 LS_DATA
SL10 SL_S.DATA
SL11 LS_RDY
SL12 VD
TO SYSCON (Page 4-17,18)
SY16 IND
SY15 IND_FRING
SY19 IND_CTL
SY18 DATE_IND
SY17 DATE_FRING
SY1 V.PULSE_ON(H)
SY2 EDIT(H)
SY5 EE(H)
SY10 V.PB(L)
SY8 V.ALL_MUTE
TO Y/C (Page 4-35)
CN2
VD
HD
TO REAR CN1 (Page 4-46)
TO AUDIO (Page 4-24)
AS2 FORCE_NOR_OUT
CN15
TO OPERATION(CAMERA) CN2 (Page 4-65)
A
B
C
D
E
F
G
H
1
2
3
4
5

4.9 SERVO SCHEMATIC DIAGRAM

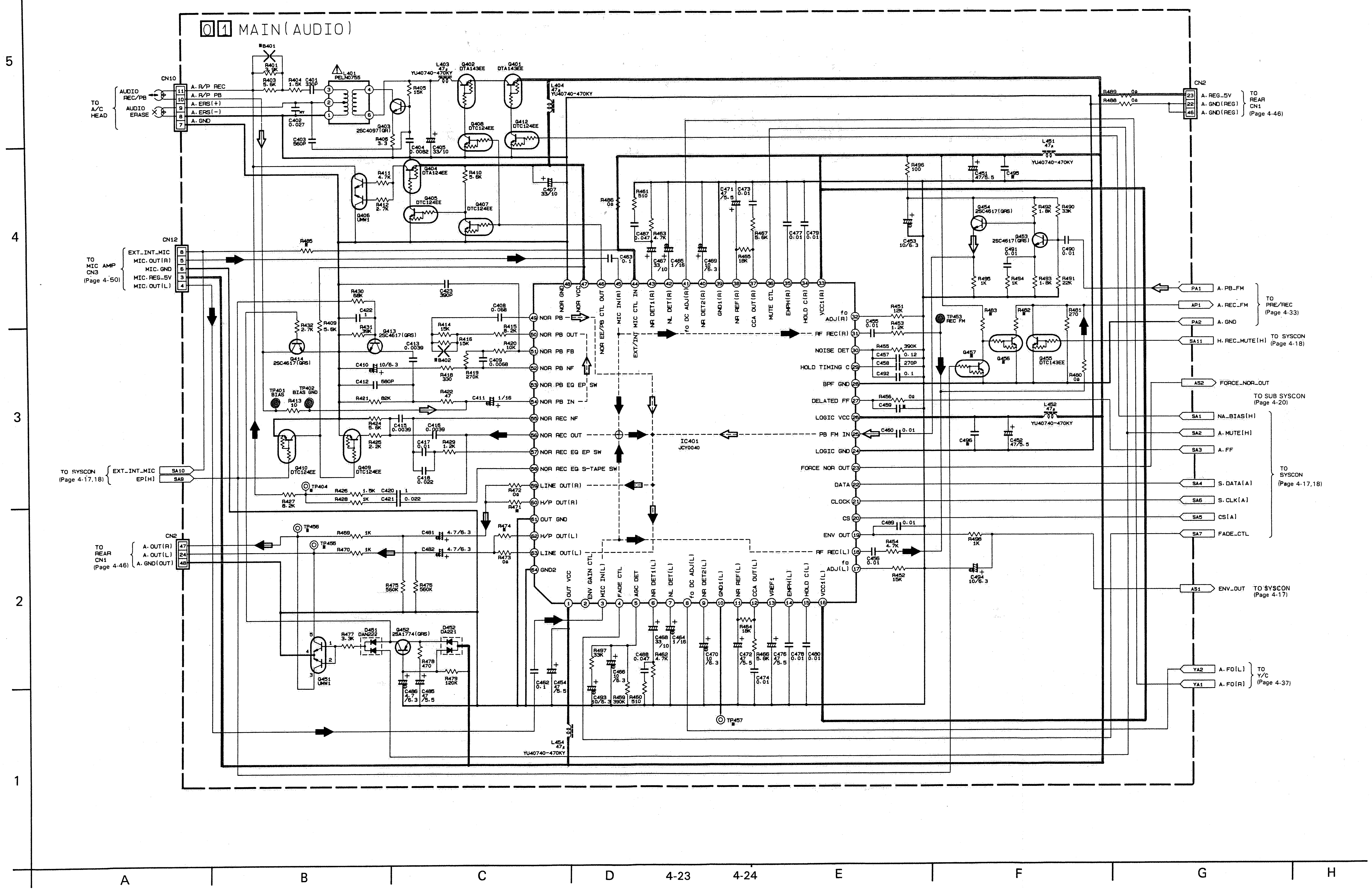


NOTE: Mark ∗ is not used.

01 MAIN(SERVO)
TO SYSCON (Page 4-17,18)
SD2 CAP_FWD[L]
SD1 CAP_BRK[H]
SD4 CAP_REF
SD3 SYS_MOD[H]
DS1 CAP_EMG
WF1
TP251 CTL PULSE
∗CN9
TO JIG CONNECTOR PB CTL
CN10
TO C HEAD
CTL HEAD(+)
CTL HEAD(−)
TO SYSCON (Page 4-17,18)
REC_CTL(+) SD6
PB_CTL_P DS5
C.FG DS3
D.FG DS4
D.PG DS2
SYS_REG_5V SD7
SYS_REG_3.5V SD8
SYS_GND SD9
R351 10K
D252 DAN222
C251 1000P
R252 470
C252 1/16
C253 47/4
R276 ∗
C264 ∗
D251 ∗
R261 0R0
C257 100/6.3
C255 0.01
R254 10K
R253 470K
C256 10/6.3
C254 100P
R251 1K
C261 1.0
R256 47K
R255 8.2K
Q251 ∗
Q252 ∗
Q253 ∗
Q254 ∗
R257 ∗
R259 ∗
R258 100
R260 ∗
C266 0.47/20
C265 ∗
REF
IC251 BA5405F
R269 8.2K
R270 47K
R268 470K
R264 ∗
R267 4.7K
R263 ∗
R262 ∗
C258 ∗
C262 1.0
C259 10/6.3
C260 0.01
R266 10K
R265 0R0
R271 1.5K
R274 2.2K
R275 2.2K
C263 1.0
VCC
R272 1.2K
R273 1K
IC252 AN1393S
TP351 C.FG
WF3
C362 10/16
MDC02 Q351
IC351 BA6860FS
R361 0.68 1/2W
C363 0.22
C352 0.22
C351 0.22
GND
EMG
VM
ERR
MODE
EC
ECR
TL
PCI
PCV
BRAKE
F/R
PS
VCC
FGOUT
FG(−)
RNF
COIL.W
COIL.V
COIL.U
COIL.WH
COIL.VH
COIL.UH
HG.U(+)
HG.U(−)
HG.V(+)
HG.V(−)
HG.W(+)
HG.W(−)
RCC
PCH
FG(+)
R352 470K
R353 120K
R354 100K
R355 15K
C358 0.047
C359 0.047
C354 0.022
C355 0.022
C356 0.022
R358 13K
C357 0.1
C361 ∗
R357 100K
R356 1K
C360 0.1
R359 1K
R360 1K
CN5
18 COIL.V
17 COIL.V
16 HG.W(+)
15 HG BIAS(+)
14 HG.V(+)
13 HG.V(−)
12 HG BIAS(−)
11 FG(−)
10 MR GND
9 FG(+)
8 MR5V
7 COIL.W
6 COIL.W
5 HG.W(−)
4 HG.U(−)
3 COIL.U
2 COIL.U
1 HG.U(+)
TO CAPSTAN MOTOR
CN4
1 PU(+)
2 PU(−)
3 FG(−)
4 FG(+)
5 HG2(+)
6 HGB(−)
7 HG2(−)
8 HG3(−)
9 COIL.1
10 COIL.1
11 COIL.3
12 COIL.3
13 COIL.2
14 COIL.2
15 HG1(−)
16 HGB(+)
17 HG1(+)
18 HG3(+)
TO DRUM MOTOR
TP303 D.PG/FG
C312 3300P
TP302 D.PG
C304 1/16
R304 120
C306 0.01
C305 680P
R305 39K
C313 0.047
R310 10K
C311 ∗
R309 10K
C310 ∗
IC301 VC5035
PG/FG
CR
PUOUT
PU(+)
PU(−)
DET
HG1(+)
HG1(−)
HG2(+)
HG2(−)
HG3(+)
HG3(−)
C1
VM
C2
VCC
GND
FGOUT
FG(+)
FG(−)
SERVO
TRC1
SAT
FC
SS
ERR
FILTER
TRC2
C3
RF
C316 10/6.3
R307 150K
R308 15K
C308 330P
R306 1K
TP301 D.FG
WF2
C307 0.47/20
C309 0.1
R311 33K
R312 4.7K
C314 0.01
C315 0.1
R314 0.68 1/2W
C301 1
C302 1
R301 2.2
R302 2.2
R303 2.2
C303 1
R313 0R0
D301 MA132WK
TO SYSCON (Page 4-18)
SD5 DRUM_REF
CN2
CAP M GND 39
CAP M GND 15
CAP POWER 38
CAP POWER 14
CAP ERROR 37
DRUM ERROR 13
DRUM POWER 36
DRUM POWER 12
DRUM M GND 35
DRUM M GND 11
TO REAR CN1 (Page 4-46)
5
4
3
2
1
A
B
C
D
E
F
G
H

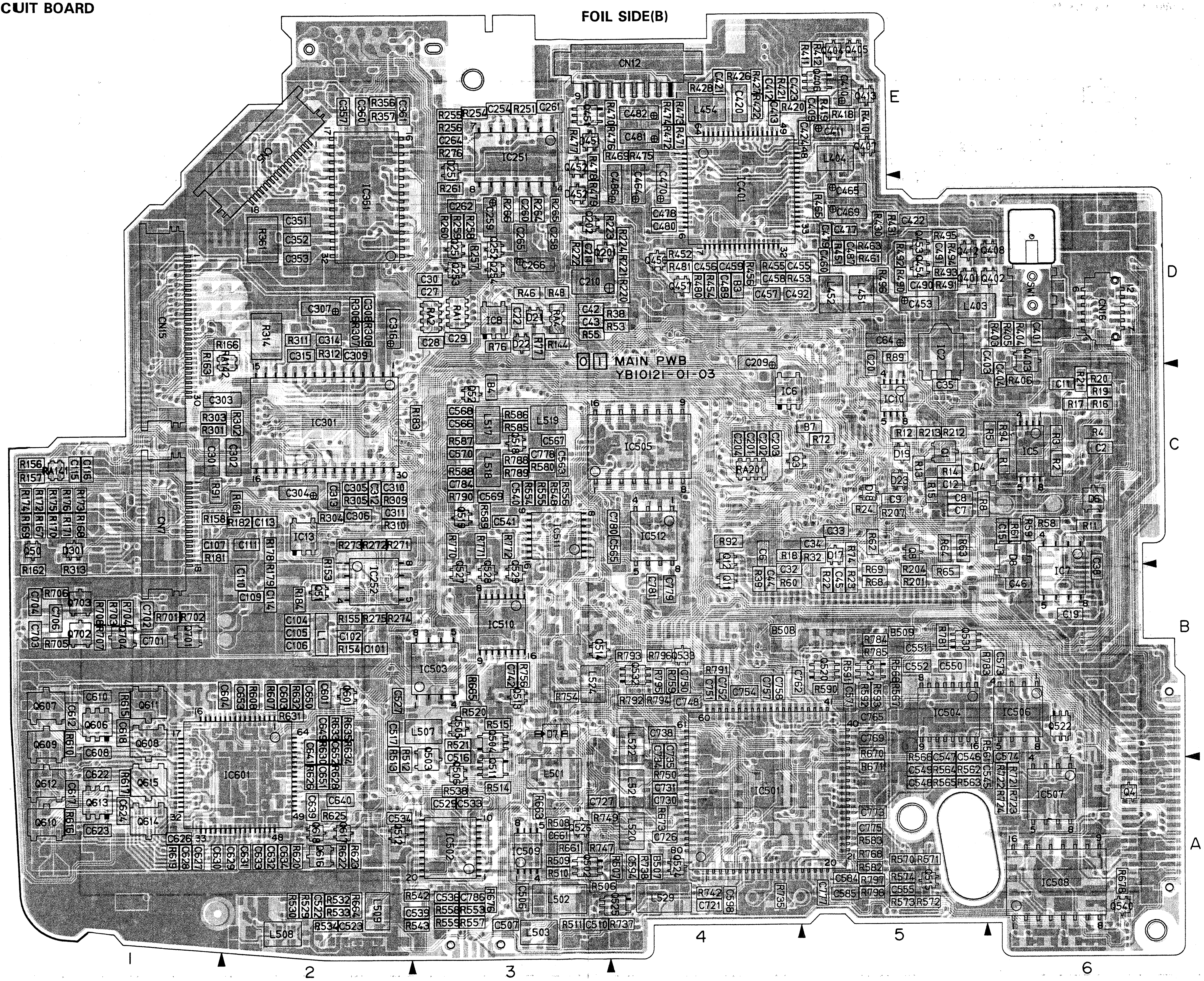
4.10 AUDIO SCHEMATIC DIAGRAM

NOTE: Mark ※ is not used.



01 MAIN(AUDIO)
TO A/C HEAD
AUDIO REC/PB
AUDIO ERASE
CN10
A.R/P REC
A.R/P PB
A.ERS(+)
A.ERS(-)
A.GND
※B401
R401 3.9K
R403 5.6K
R404 1.5K
C401 330P
C402 0.027
C403 560P
L401 PELN0755
Q403 2SC4097(QR)
R405 15K
R406 3.3
C404 0.0082
C405 33/10
L403 47μ YU40740-470KY
Q402 DTA143EE
Q401 DTA143EE
Q408 DTC124EE
Q412 DTC124EE
L404 47μ YU40740-470KY
Q404 DTA124EE
Q405 DTC124EE
Q406 UMH1
Q407 DTC124EE
R410 5.6K
R411 4.7K
R412 2.7K
C407 33/10
TO MIC AMP CN3 (Page 4-50)
CN12
EXT_INT_MIC
MIC.OUT(R)
MIC.GND
MIC.REG_5V
MIC.OUT(L)
R485
R430 68K
C422 1
R431 39K
Q413 2SC4617(QRS)
R432 2.7K
R409 5.6K
Q414 2SC4617(QRS)
C423 390P
C408 0.068
R414 15K
R415 8.2K
R416 15K
R420 10K
C413 0.0039
※B402
C409 0.0068
R419 270K
R418 330
C410 10/6.3
C412 560P
TP401 BIAS
TP402 BIAS GND
R413 10
R421 82K
R422 47
C411 1/16
R424 5.6K
C415 0.0039
C416 0.0039
R425 2.2K
C417 0.01
R429 1.2K
C418 0.022
Q410 DTC124EE
Q409 DTC124EE
TO SYSCON (Page 4-17,18)
EXT_INT_MIC
EP(H)
SA10
SA9
TP404
R426 1.5K
C420 1
R427 8.2K
R428 1K
C421 0.022
R472 0Ω
R471
R474
R473 0Ω
TO REAR CN1 (Page 4-46)
CN2
A.OUT(R)
A.OUT(L)
A.GND(OUT)
TP456
TP455
R469 1K
R470 1K
C481 4.7/6.3
C482 4.7/6.3
R475 560K
R476 560K
Q451 UMH1
R477 3.3K
D451 DAN222
Q452 2SA1774(QRS)
D452 DA221
R478 470
R479 120K
C486 4.7/6.3
C485 47/5.5
L454 47μ YU40740-470KY
C462 0.1
C454 47/5.5
R497 33K
C493 10/6.3
C466 10/6.3
R459 390K
R460 510
C468 33/10
C464 1/16
C488 0.047
R462 4.7K
C470 10/6.3
R464 18K
C472 47/5.5
R466 5.6K
C476 47/5.5
C478 0.01
C480 0.01
C474 0.01
TP457
IC401 JCY0040
NOR PB
NOR PB OUT
NOR PB FB
NOR PB NF
NOR PB EQ EP SW
NOR PB IN
NOR REC NF
NOR REC OUT
NOR REC EQ EP SW
NOR REC EQ S-TAPE SW
LINE OUT(R)
H/P OUT(R)
OUT GND
H/P OUT(L)
LINE OUT(L)
GND2
OUT VCC
ENV GAIN CTL
MIC IN(L)
FADE CTL
AGC DET
NR DET1(L)
NL DET(L)
fo DC ADJ(L)
NR DET2(L)
GND1(L)
NR REF(L)
CCA OUT(L)
VREF1
EMPH(L)
HOLD C(L)
VCC1(L)
NOR GND
NOR VCC
NOR EE/PB CTL OUT
MIC IN(R)
EXT/INT MIC CTL IN
NR DET1(R)
NL DET(R)
fo DC ADJ(R)
NR DET2(R)
GND1(R)
NR REF(R)
CCA OUT(R)
MUTE CTL
EMPH(R)
HOLD C(R)
VCC1(R)
fo ADJ(R)
RF REC(R)
NOISE DET
HOLD TIMING C
BPF GND
DELATED FF
LOGIC VCC
PB FM IN
LOGIC GND
FORCE NOR OUT
DATA
CLOCK
CS
ENV OUT
RF REC(L)
fo ADJ(L)
R486 0Ω
R461 510
C487 0.047
R463 4.7K
C467 33/10
C465 1/16
C469 10/6.3
C471 47/5.5
C473 0.01
R457 5.6K
R465 18K
C477 0.01
C479 0.01
R496 100
C451 47/5.5
C495
L451 47μ YU40740-470KY
C453 10/6.3
Q454 2SC4617(QRS)
R492 1.8K
R490 33K
Q453 2SC4617(QRS)
C491 0.01
C490 0.01
R495 1K
R494 1K
R493 1.8K
R491 22K
R451 12K
C455 0.01
R453 1.2K
R455 390K
C457 0.12
C458 270P
C492 0.1
R456 0Ω
C459
L452 47μ YU40740-470KY
C460 0.01
C496
C452 47/5.5
C489 0.01
R454 4.7K
C456 0.01
R452 15K
R498 1K
C494 10/6.3
TP453 REC FM
R483
R482
R481 270
Q457
Q456
Q455 DTC143EE
R480 0Ω
CN2
R489 0Ω
R488 0Ω
A.REG_5V
A.GND(REG)
A.GND(REG)
TO REAR CN1 (Page 4-46)
PA1 A.PB_FM
AP1 A.REC_FM
PA2 A.GND
TO PRE/REC (Page 4-33)
SA11 H.REC_MUTE(H)
TO SYSCON (Page 4-18)
AS2 FORCE_NOR_OUT
TO SUB SYSCON (Page 4-20)
SA1 NA_BIAS(H)
SA2 A.MUTE(H)
SA3 A.FF
SA4 S.DATA(A)
SA6 S.CLK(A)
SA5 CS(A)
SA7 FADE_CTL
TO SYSCON (Page 4-17,18)
AS1 ENV_OUT
TO SYSCON (Page 4-17)
YA2 A.FO(L)
YA1 A.FO(R)
TO Y/C (Page 4-37)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.11 MAIN CIRCUIT BOARD


FOIL SIDE(B)
MAIN PWB
YB10121-01-03
A
B
C
D
E
1
2
3
4
5
6

PARTS LOCATION GUIDE <MAIN BOARD>

REF. NO.	LOCATION	Q408	B-6D	Q609	B-1B	R20	A-6C	R175	B-1C	R310	B-2C	R467	A-5D
I C		Q409	A-5E	Q610	B-1A	R21	A-6C	R176	B-1C	R311	B-2D	R469	B-4E
IC1	A-5C	Q410	A-5D	Q611	B-1B	R22	B-5B	R177	A-2B	R312	B-2D	R470	B-4E
IC2	B-5D	Q412	B-5D	Q612	B-1A	R23	B-5B	R178	B-2C	R313	B-1C	R471	B-4E
IC4	A-6B	Q413	B-5E	Q613	B-1A	R24	B-5C	R179	B-2B	R314	B-2D	R472	B-4E
IC5	B-6C	Q414	A-5E	Q614	B-1A	R32	B-5C	R180	A-2B	R351	A-2D	R473	B-4E
IC6	B-4C	Q451	B-3E	Q615	B-1A	R38	B-4D	R181	B-2C	R352	A-2D	R474	B-4E
IC7	B-6B	Q452	B-3E	Q616	B-2A	R39	B-4B	R182	B-2C	R353	A-2D	R475	B-4E
IC8	B-3B	Q453	B-5D	Q617	B-2A	R45	A-6D	R183	B-3C	R354	A-2D	R476	B-4E
IC10	B-5C	Q454	B-5D	Q618	B-2A	R46	B-3D	R184	B-2B	R355	A-2D	R477	B-3E
IC11	A-2C	Q455	A-4D	Q701	B-1B	R48	B-3D	R201	B-5B	R356	B-2E	R478	B-3E
IC12	A-2B	Q456	B-4D	Q702	B-1B	R49	A-4C	R204	B-5B	R357	B-2E	R479	B-3D
IC13	B-2C	Q457	B-4D	Q703	B-1B	R53	B-4D	R207	B-5C	R358	A-2E	R480	B-4D
IC251	B-3E	Q501	A-4A	Q704	B-1B	R55	B-3D	R212	B-5C	R359	A-2E	R481	B-4D
IC252	B-2B	Q502	B-3A	REF. NO.	LOCATION	R58	B-6C	R213	B-5C	R360	A-2E	R482	A-4D
IC301	B-2C	Q503	B-3B	DIODE		R59	B-6C	R214	A-4D	R361	B-2D	R483	A-4D
IC351	B-2D	Q504	B-3B	D4	B-5C	R60	B-4B	R215	A-4D	R401	A-5D	R485	A-4E
IC401	B-4D	Q505	B-3B	D6	B-6C	R61	B-6C	R220	B-4D	R403	B-6D	R486	A-4E
IC501	B-4A	Q506	B-3A	D7	B-3B	R62	B-5C	R221	B-4D	R404	B-6D	R488	A-6D
IC502	B-3A	Q507	A-2A	D8	B-6C	R63	B-5C	R222	B-3D	R405	B-6D	R489	A-6D
IC503	B-3B	Q508	A-2A	D10	A-6B	R64	B-5C	R223	B-4D	R406	B-6C	R490	B-5D
IC504	B-5B	Q509	A-2A	D17	B-5C	R65	B-5B	R224	B-4D	R409	A-5E	R491	B-5D
IC505	B-4C	Q510	A-2A	D18	B-5C	R68	B-5B	R251	B-3E	R410	B-5E	R492	B-5D
IC506	B-6B	Q511	B-3A	D19	B-5C	R69	B-5B	R252	A-3E	R411	B-5E	R493	B-5D
IC507	B-6A	Q512	B-2A	D21	B-3D	R72	B-5C	R253	A-3E	R412	B-5E	R494	B-5D
IC508	B-6A	Q513	B-3B	D22	B-3D	R74	B-5C	R254	B-3E	R413	A-5E	R495	B-5D
IC509	B-3A	Q514	B-3B	D23	B-5C	R76	B-3D	R255	B-3E	R414	A-5D	R496	B-5D
IC510	B-3B	Q515	B-5A	D24	A-6B	R77	B-3D	R256	B-3E	R415	A-5E	R497	A-4E
IC511	B-3C	Q516	A-4C	D251	B-3E	R88	A-5C	R257	B-3D	R416	A-5E	R498	A-5D
IC512	B-4C	Q517	A-4B	D252	A-3E	R89	B-5D	R258	B-3D	R418	B-5E	R501	A-3B
IC601	B-2A	Q518	B-3C	D301	B-1C	R91	B-2C	R259	B-3D	R419	B-5E	R502	A-3A
REF. NO.	LOCATION	Q519	B-3C	D451	B-3E	R92	B-4C	R260	B-3D	R420	B-5E	R503	A-3B
TRANSISTOR		Q520	B-5B	D452	B-3D	R93	A-6B	R261	B-3D	R421	B-4E	R504	A-3B
Q1	B-5C	Q521	B-5B	D502	B-3B	R94	B-6C	R262	A-3D	R422	B-4E	R505	A-4A
Q2	A-6D	Q522	B-6B	D503	A-6B	R142	A-5D	R263	A-3D	R424	A-4E	R506	B-4A
Q3	B-5C	Q523	A-6B	D504	A-4A	R144	B-3D	R264	B-3D	R425	A-5E	R507	B-4A
Q4	B-6A	Q524	B-4A	D601	A-1A	R145	A-5D	R265	B-3D	R426	B-4E	R508	B-3A
Q8	B-5C	Q525	B-4A	D602	A-1B	R147	A-5C	R266	B-3D	R427	B-4E	R509	B-3A
Q11	B-4B	Q526	B-3A	D603	A-2A	R149	A-6C	R267	A-3D	R428	B-4E	R510	B-3A
Q12	B-4C	Q527	B-2B	REF. NO.	LOCATION	R153	B-2B	R268	A-3D	R429	A-4E	R511	B-3A
Q50	B-1C	Q528	B-2B	RESISTOR		R154	B-2B	R269	A-3D	R430	B-5D	R512	B-2B
Q51	B-2B	Q529	B-2B	R1	B-6C	R155	B-2B	R270	A-3D	R431	B-5D	R513	B-2B
Q52	B-3C	Q530	B-5B	R2	B-6C	R156	B-1C	R271	B-2C	R432	A-5E	R514	B-3A
Q201	B-4D	Q532	B-4B	R3	B-6C	R157	B-1C	R272	B-2C	R451	B-5D	R515	B-3B
Q202	B-3D	Q533	B-4B	R4	B-6C	R158	B-2C	R273	B-2C	R452	B-4D	R516	A-3B
Q251	B-3D	Q536	A-3B	R5	B-6C	R161	B-2C	R274	B-2B	R453	B-5D	R517	A-3B
Q252	B-3D	Q537	A-3A	R8	B-5C	R162	B-1C	R275	B-2B	R454	B-4D	R518	A-3B
Q253	B-3D	Q538	A-3A	R9	A-6C	R163	B-1D	R276	B-3E	R455	B-4D	R519	A-3B
Q254	B-3D	Q539	A-4B	R11	A-6C	R166	B-2D	R301	B-2C	R456	B-4D	R520	B-3B
Q351	A-2D	Q540	B-6A	R12	B-5C	R167	B-1C	R302	B-2C	R459	A-4E	R521	B-3B
Q401	B-5D	Q601	B-2B	R13	B-5C	R168	B-1C	R303	B-2C	R460	A-4D	R522	A-3B
Q402	B-6D	Q603	A-2A	R14	B-5C	R169	B-1C	R304	B-2C	R461	B-5D	R523	A-3B
Q403	B-6D	Q604	A-2A	R15	B-5C	R170	B-1C	R305	B-2C	R462	A-4D	R524	A-3A
Q404	B-5E	Q605	A-2B	R16	A-6C	R171	B-1C	R306	B-2D	R463	B-5D	R525	A-2A
Q405	B-5E	Q606	B-1B	R17	A-6C	R172	B-1C	R307	B-2D	R464	A-4D	R526	A-2A
Q406	B-5E	Q607	B-1B	R18	B-4C	R173	B-1C	R308	B-2D	R465	B-5D	R527	A-2A
Q407	B-5E	Q608	B-1B	R19	A-6C	R174	B-1C	R309	B-2C	R466	A-4D	R528	A-2A

R529	B-2A	R590	B-5B	R676	B-3A	R767	A-5A	C12	B-5C	C259	B-3D	C451	A-5D
R530	B-2A	R591	B-5B	R677	A-3B	R768	B-5A	C13	A-5C	C260	B-3D	C452	A-5D
R531	A-2A	R592	B-5B	R678	B-6A	R770	B-3C	C15	B-6C	C261	B-3E	C453	B-5D
R532	B-2A	R593	B-5B	R701	B-1B	R771	B-3C	C19	B-6B	C262	B-3D	C454	A-4E
R533	B-2A	R594	A-6B	R702	B-1B	R772	B-3C	C20	B-5D	C263	A-2C	C455	B-5D
R534	B-2A	R595	A-6A	R703	B-1B	R773	A-3B	C22	B-3D	C264	B-3E	C456	B-4D
R535	A-2A	R596	A-4B	R704	B-1B	R774	A-3B	C27	B-3D	C265	B-3D	C457	B-4D
R536	A-3B	R597	A-4B	R705	B-1B	R775	A-3B	C28	B-3D	C266	B-3D	C458	B-4D
R537	A-3B	R598	A-6A	R706	B-1B	R776	A-3B	C29	B-3D	C301	B-1C	C459	B-4D
R538	B-3A	R599	A-6A	R707	B-1B	R777	A-3B	C30	B-3D	C302	B-2C	C460	B-5D
R539	A-3A	R601	A-2B	R708	B-1B	R778	A-3B	C32	B-4C	C303	B-2C	C462	A-4E
R540	A-3A	R602	A-2B	R721	B-6A	R779	A-6B	C33	B-5C	C304	B-2C	C463	A-4E
R541	A-3A	R603	A-2A	R722	B-6A	R780	A-6B	C34	B-5C	C305	B-2C	C464	B-4D
R542	B-3A	R604	A-2A	R723	B-6A	R781	B-5B	C35	B-5C	C306	B-2C	C465	B-5D
R543	B-3A	R605	A-2A	R724	B-6A	R782	A-5B	C38	B-6C	C307	B-2D	C466	A-4E
R545	A-3B	R607	B-2B	R725	A-6A	R783	B-5B	C42	B-3D	C308	B-2D	C467	A-4D
R546	A-3C	R608	B-2B	R726	A-6A	R784	B-5B	C43	B-3D	C309	B-2D	C468	A-4E
R547	A-3B	R609	A-1B	R727	A-6A	R785	B-5B	C44	B-4B	C310	B-2C	C469	B-5D
R548	B-3C	R610	B-1B	R728	A-6A	R786	A-3B	C45	B-5B	C311	B-2C	C470	B-4D
R549	A-3A	R611	A-1A	R729	A-6A	R787	A-3B	C46	B-6B	C312	B-2C	C471	A-4D
R550	A-3A	R612	A-1A	R730	A-6A	R788	B-3C	C64	B-5D	C313	B-2C	C472	A-4D
R551	A-3A	R613	A-1B	R731	A-6A	R789	B-3C	C67	A-5D	C314	B-2D	C473	A-5D
R552	A-3A	R614	A-1B	R732	A-6A	R790	B-3C	C101	B-2B	C315	B-2D	C474	A-4D
R553	B-3A	R615	B-1B	R733	A-5A	R791	B-4B	C102	B-2B	C316	B-2D	C476	A-4D
R554	B-3C	R616	B-1A	R734	A-4A	R792	B-4B	C103	A-3B	C351	B-2D	C477	B-5D
R555	B-3C	R617	B-1A	R735	B-4A	R793	B-4B	C104	B-2B	C352	B-2D	C478	B-4D
R556	B-3C	R618	A-1A	R736	A-4A	R794	B-4B	C105	B-2B	C353	B-2D	C479	B-5D
R557	B-3A	R619	B-1A	R737	B-4A	R795	B-4B	C106	B-2B	C354	A-2D	C480	B-4D
R558	B-3A	R620	B-2A	R738	B-4A	R796	B-4B	C107	B-1C	C355	A-2E	C481	B-4E
R559	B-3A	R621	A-2A	R739	A-4A	R797	B-5A	C108	A-2C	C356	A-2E	C482	B-4E
R560	A-3B	R622	B-2A	R740	A-3A	R798	B-5A	C109	B-2B	C357	B-2E	C485	A-3E
R561	B-5B	R623	B-2A	R741	A-3A	R799	A-5A	C110	B-2B	C358	A-2E	C486	B-4D
R562	B-5A	R624	A-2A	R742	B-4A	REF. NO.	LOCATION	C111	B-2C	C359	A-2E	C487	B-5D
R563	B-5A	R625	B-2A	R743	A-3A	NETWORK RESISTOR		C112	A-2C	C360	B-2E	C488	A-4D
R564	B-5A	R626	B-2A	R744	A-4A			C113	B-2C	C361	B-2E	C489	B-4D
R565	B-5A	R628	B-2A	R745	A-4A	RA1	B-3D	C114	B-2B	C362	A-2E	C490	B-5D
R566	B-5B	R630	B-2B	R746	A-4A	RA2	B-3D	C115	B-1C	C401	B-6D	C491	B-5D
R567	B-5B	R631	B-2B	R747	B-3A	RA3	A-6C	C116	B-1C	C402	A-6D	C492	B-5D
R568	B-5B	R632	B-2B	R748	A-3A	RA4	B-3D	C201	B-4C	C403	B-6D	C493	A-4E
R569	A-4B	R633	B-2B	R749	B-3A	RA141	B-1C	C202	B-4C	C404	B-6C	C494	A-5D
R570	B-5A	R634	B-2B	R750	B-4A	RA142	B-2D	C203	B-4C	C405	A-5D	C495	A-5D
R571	B-5A	R635	B-2B	R751	A-3B	RA201	B-4C	C204	B-4C	C407	A-4E	C496	A-5D
R572	B-5A	R661	B-3A	R752	A-3B	RA202	A-5D	C205	A-5C	C408	A-5E	C501	A-3B
R573	B-5A	R662	A-3A	R753	A-3B	RA203	A-5C	C206	A-5C	C409	B-5E	C502	A-3A
R574	B-5A	R663	B-3A	R754	B-3B	REF. NO.	LOCATION	C207	A-5C	C410	B-5E	C503	A-3A
R575	A-4B	R664	B-2A	R755	A-3B	CAPACITOR		C208	A-5C	C411	B-5E	C504	A-3B
R576	A-4C	R665	B-3B	R756	A-3B	C1	A-6C	C209	B-4D	C412	B-4E	C505	A-3B
R577	A-4C	R666	A-4B	R757	A-3B	C2	B-6C	C210	B-4D	C413	B-4E	C506	B-3A
R580	B-3C	R667	A-3B	R758	A-3B	C3	A-6C	C211	B-4D	C415	A-4E	C507	B-3A
R581	A-4C	R668	A-2A	R759	B-4B	C4	A-6C	C251	A-3E	C416	A-4E	C508	A-2A
R582	B-5A	R669	A-6B	R760	A-3B	C5	B-5C	C252	A-3E	C417	A-4E	C509	A-3A
R583	B-5A	R670	B-5B	R761	A-5B	C6	B-4C	C253	A-3E	C418	A-4E	C510	B-3A
R585	B-3C	R671	B-5A	R762	A-4B	C7	B-5C	C254	B-3E	C420	B-4E	C511	A-3B
R586	B-3C	R672	A-4B	R763	A-4A	C8	B-5C	C255	A-3E	C421	B-4E	C512	A-3B
R587	B-3C	R673	B-4A	R764	A-4A	C9	B-5C	C256	A-3E	C422	B-5D	C513	A-3B
R588	B-3C	R674	A-4B	R765	A-4B	C10	A-6D	C257	A-3E	C423	B-5E	C514	A-3B
R589	B-3C	R675	A-4B	R766	A-5B	C11	A-6C	C258	B-3D	C424	B-5E	C515	A-3B

C516	B-3B
C517	B-2B
C518	A-3B
C519	A-2A
C520	A-2A
C521	A-2A
C522	B-2A
C523	B-2A
C524	A-2A
C525	A-3B
C526	A-3B
C527	B-2B
C528	A-3B
C529	B-3A
C530	A-3A
C531	A-3A
C532	A-3A
C533	B-3A
C534	B-2A
C535	A-2A
C536	B-3A
C537	A-3A
C538	A-3A
C539	B-3A
C540	B-3C
C541	B-3C
C542	A-3B
C543	A-3B
C544	A-5B
C545	B-6A
C546	B-5B
C547	B-5B
C548	B-5A
C549	B-5A
C550	B-5B
C551	B-5B
C552	B-5B
C553	A-5B
C555	B-5A
C556	A-4C
C557	A-4C
C558	A-4C
C559	A-4C
C560	A-4C
C561	A-4C
C562	A-4C
C563	B-3C
C564	A-3C
C565	B-4B
C566	B-3C
C567	B-3C
C568	B-3C
C569	B-3C
C570	B-3C
C571	B-5B
C572	A-6B
C573	B-6B
C574	B-6B
C575	A-6A
C576	A-6A
C577	A-6B
C578	A-6A
C579	A-6A
C580	A-6A
C581	A-6A
C582	A-6A
C583	A-6A
C584	B-5A
C585	B-5A
C586	A-5A
C587	A-5A
C588	A-4A
C589	A-4A
C590	A-4A
C591	A-5A
C592	A-5A
C593	A-3A
C594	B-4A
C595	A-4A
C596	A-4A
C597	A-3A
C598	B-4A
C599	A-4A
C601	B-2B
C602	A-2B
C603	B-2B
C604	B-2B
C605	A-1B
C606	A-2B
C607	A-2B
C608	B-1B
C609	A-2B
C610	B-1B
C611	A-1B
C612	B-1B
C613	A-1B
C614	A-1A
C615	A-1B
C616	A-1B
C617	B-1A
C618	B-1B
C619	A-1A
C620	A-1B
C621	A-1A
C622	B-1A
C623	B-1A
C624	B-1A
C625	A-2A
C626	B-1A
C627	B-1A
C628	B-1A
C629	B-2A
C630	B-2A
C631	B-2A
C632	B-2A
C633	B-2A
C634	B-2A
C635	A-2A
C636	A-2A
C637	A-2A
C638	A-2A
C639	B-2A
C640	B-2A
C641	B-2B
C642	A-2B
C643	A-2B
C644	A-2B
C645	A-2B
C646	A-2B
C647	A-1A
C648	A-2B
C649	B-2B
C650	B-2B
C651	B-2A
C652	B-2B
C653	B-2B
C654	A-2A
C661	B-3A
C662	A-2A
C701	B-1B
C702	B-1B
C703	B-1B
C704	B-1B
C705	A-1B
C706	B-1B
C707	A-1B
C721	B-4A
C722	A-4A
C723	A-3A
C724	A-4A
C725	A-4A
C726	B-4A
C727	B-3A
C730	B-4A
C731	B-4A
C732	A-4A
C733	A-4A
C734	B-4B
C735	B-4B
C736	A-4B
C737	A-4B
C738	B-4B
C739	A-3B
C740	A-3B
C741	A-3B
C742	A-3B
C743	A-3B
C744	A-3B
C745	A-4B
C746	A-3B
C747	A-3B
C748	B-4B
C749	A-3B
C750	B-4B
C751	B-4B
C752	B-4B
C753	A-5B
C754	B-4B
C755	A-4B
C756	A-4B
C757	B-4B
C758	B-4B
C759	A-5B
C760	A-5B
C761	A-5B
C762	B-5B
C763	A-5B
C764	A-5B
C765	B-5B
C766	A-5B
C767	A-4A
C768	A-5B
C769	B-5B
C770	A-5B
C771	A-5A
C772	A-5A
C773	B-5A
C774	A-5A
C775	B-5A
C776	A-5A
C777	B-5A
C778	B-3C
C779	B-4B
C780	B-4C
C781	B-4B
C782	A-5B
C783	A-4C
C784	B-3C
C785	A-3A
C786	B-3A
C787	A-4C
C788	A-4A
C789	A-4C
C790	A-4C
C792	A-6D
C793	A-6D

REF. NO.	LOCATION
COIL	
L1	B-2B
L401	A-6C
L403	B-5D
L404	B-5E
L451	B-5D
L452	B-5D
L454	B-4E
L501	B-3A
L502	B-3A
L503	B-3A
L504	A-3A
L505	A-3B
L506	A-2B
L507	B-3B
L508	B-2A
L509	B-2A
L510	A-2A
L511	A-3A
L512	A-3A
L513	A-3B
L515	A-3B
L516	A-4C
L517	B-3C
L518	B-3C
L519	B-3C
L520	B-4A
L521	B-4A
L522	B-4B
L524	B-3B
L525	A-3B
L526	A-3B
L527	A-4B
L528	A-4B
L529	B-4A
L530	A-6A
L531	A-6A
L532	A-2A
L533	A-4B
L601	A-2B
L602	A-2A
L603	A-2A
L604	A-2A
L605	A-2B
L606	A-2B
L701	A-1B
L702	A-1B
L703	A-1B

REF. NO.	LOCATION
EQUALIZER	
EQ501	A-5A
EQ502	A-4B

REF. NO.	LOCATION
LC TRAP	
LC501	A-4A

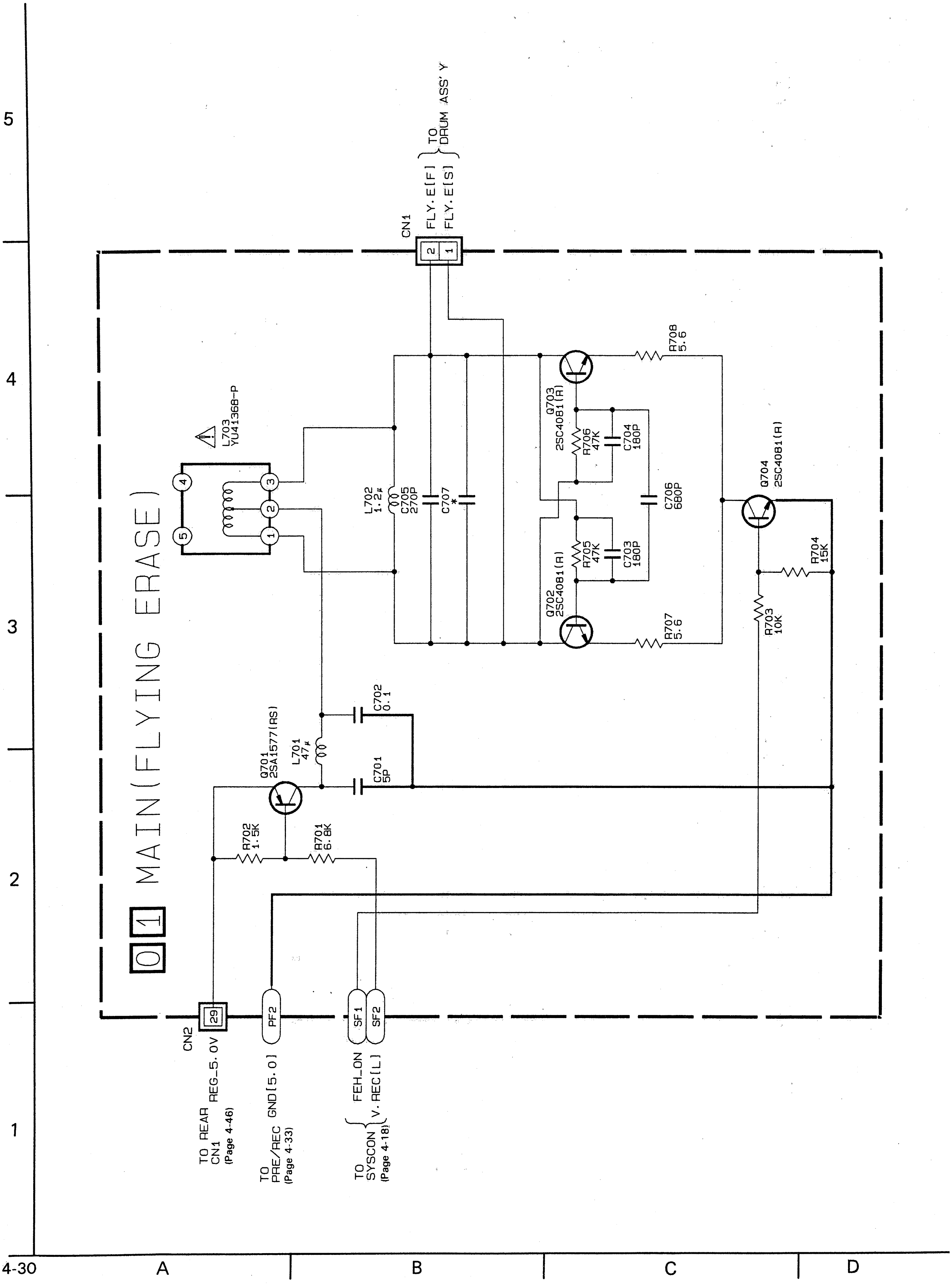
REF. NO.	LOCATION
RESONATOR	
X11	A-2B

REF. NO.	LOCATION
SWITCH	
SW1	B-6D

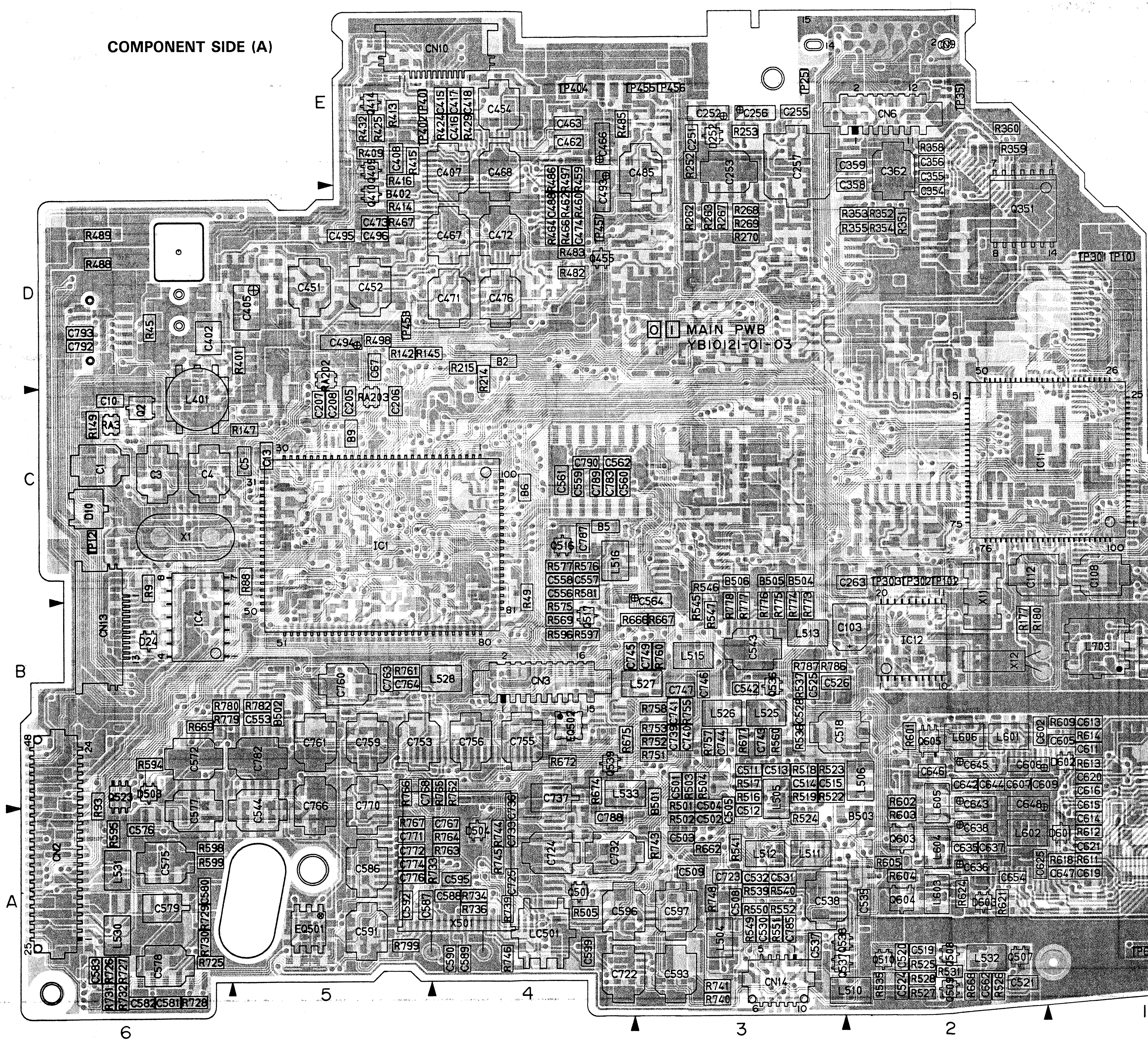
REF. NO.	LOCATION
CONNECTOR	
CN1	A-1A
CN2	A-6A
CN3	A-4B
CN4	A-1C
CN5	B-2E
CN6	A-2E
CN7	B-1C
CN9	A-2E
CN10	A-4E
CN12	B-4E
CN13	A-6B
CN14	A-3A
CN15	B-1D
CN16	B-6D

REF. NO.	LOCATION
TEST PIN	
TP12	A-6C
TP101	A-1D
TP102	A-2C
TP251	A-3E
TP301	A-1D
TP302	A-2C
TP303	A-2C
TP351	A-2E
TP401	A-5E
TP402	A-5E
TP404	A-4E
TP453	A-5D
TP455	A-3E
TP456	A-3E
TP457	A-4D
TP602	A-1A

4.12 FLYING ERASE SCHEMATIC DIAGRAM


01 MAIN(FLYING ERASE)
CN1
2
1
FLY.E[F]
FLY.E[S]
TO DRUM ASS'Y
L703
YU41368-P
4
5
3
2
1
L702
1.2μ
C705
270P
C707
*
Q703
2SC4081(R)
R706
47K
C704
180P
C706
680P
Q702
2SC4081(R)
R705
47K
C703
180P
R708
5.6
R707
5.6
Q704
2SC4081(R)
R704
15K
R703
10K
C702
0.1
C701
5P
L701
47μ
Q701
2SA1577(RS)
R702
1.5K
R701
6.8K
CN2
29
PF2
SF1
SF2
REG_5.0V
TO REAR CN1
(Page 4-46)
GND[5.0]
TO PRE/REC
(Page 4-33)
FEH_ON
V.REC[L]
TO SYSCON
(Page 4-18)
5
4
3
2
1
A
B
C
D

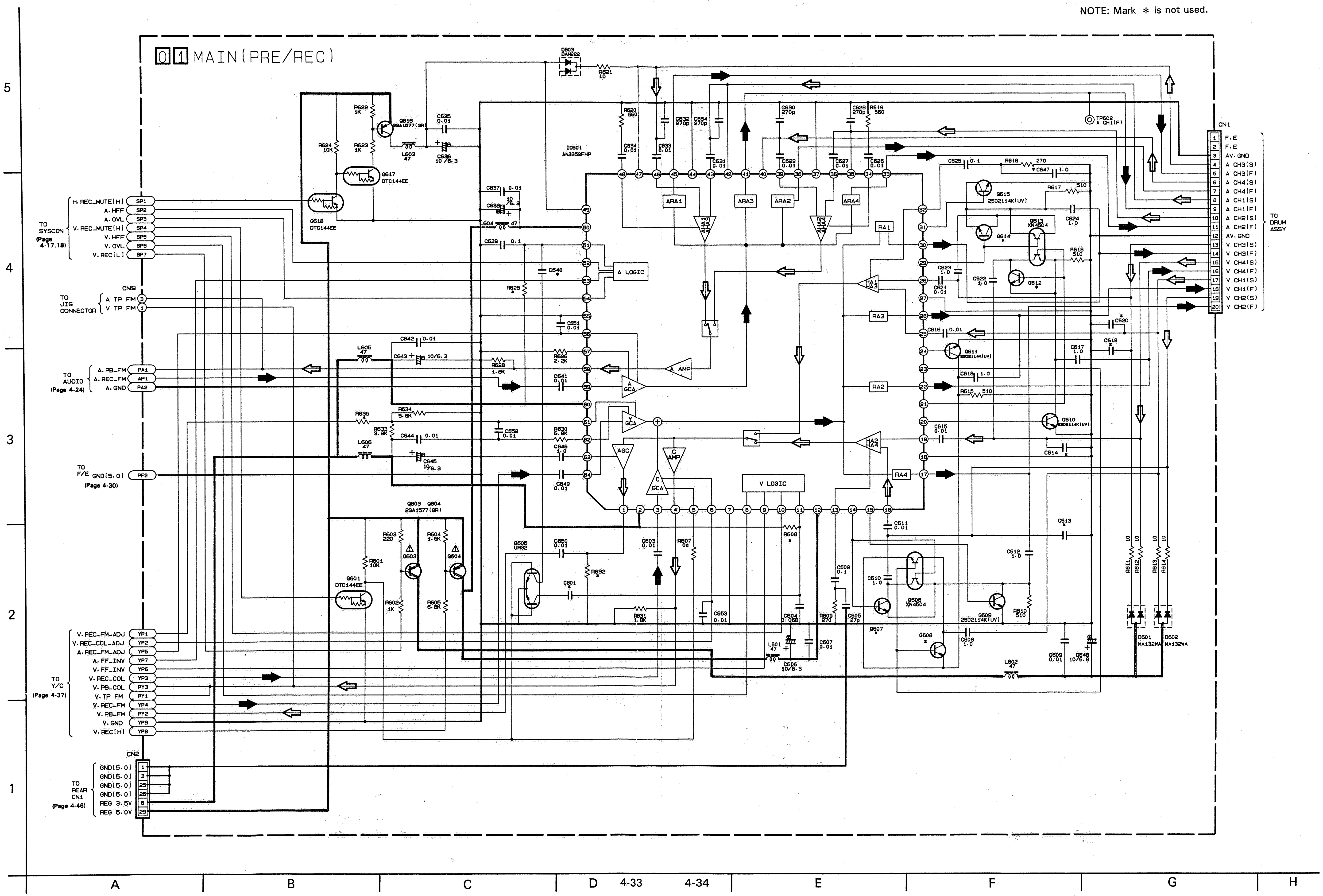
COMPONENT SIDE (A)



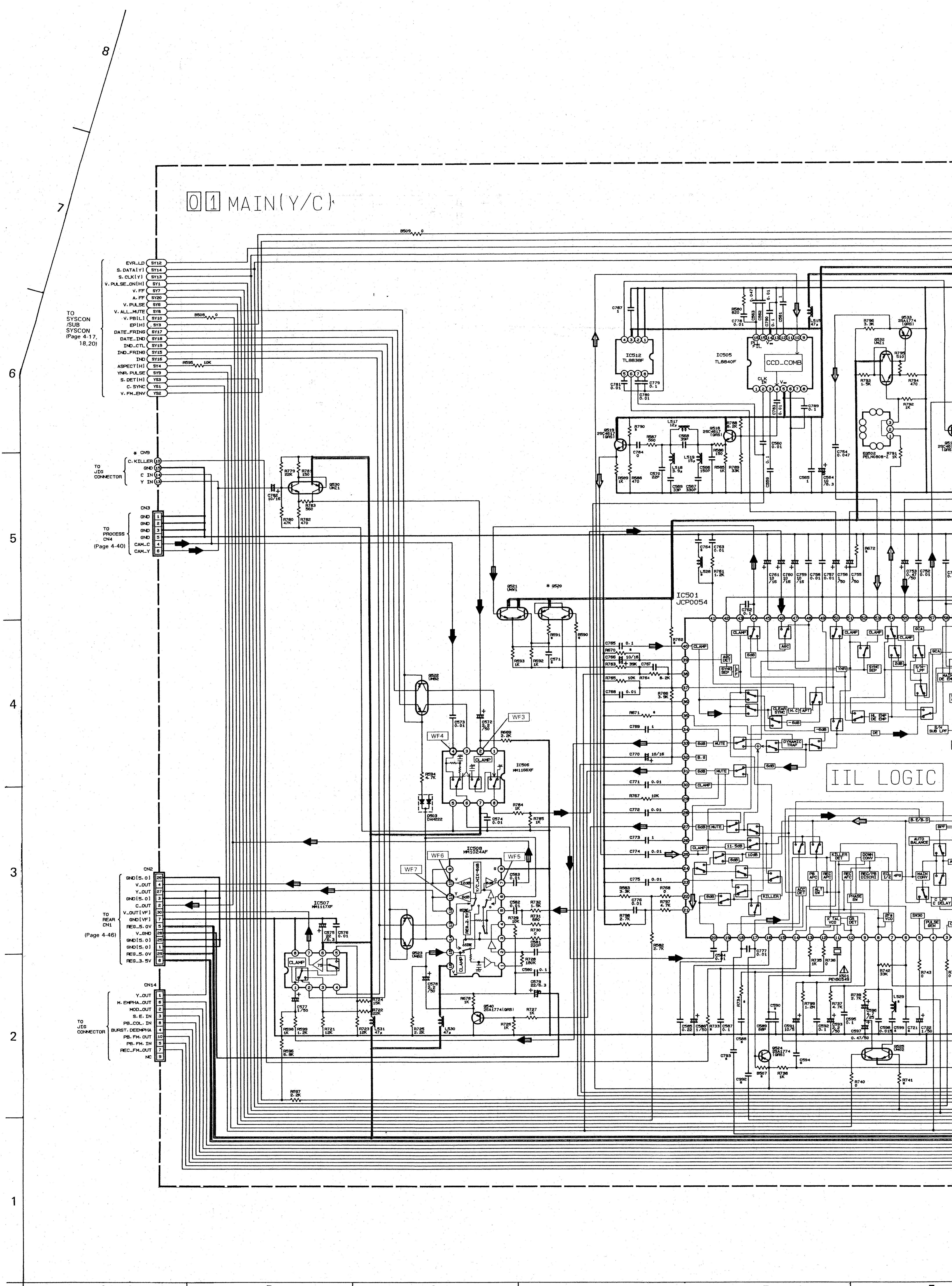
01 MAIN PWB
YB10121-01-03
A
B
C
D
E
1
2
3
4
5
6
CN10
CN6
CN4
CN7
CN3
CN2
CN13
CN14
IC1
IC4
IC11
IC12
Q351
X1
X11
X12
X501
L401
TP404
TP455
TP456
TP251
TP351
TP301
TP101
TP303
TP302
TP102
TP602

4.13 PRE/REC SCHEMATIC DIAGRAM

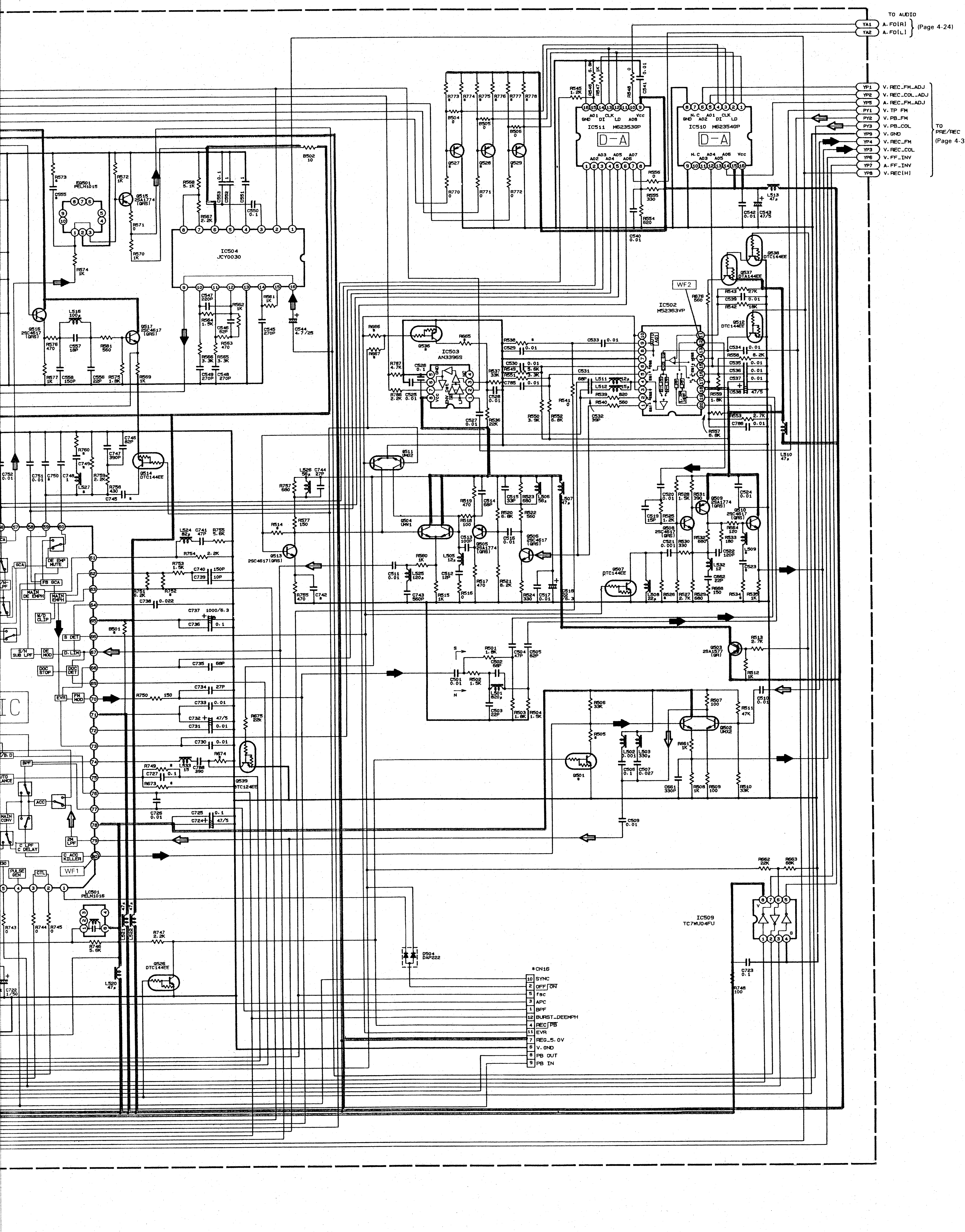
NOTE: Mark ＊ is not used.

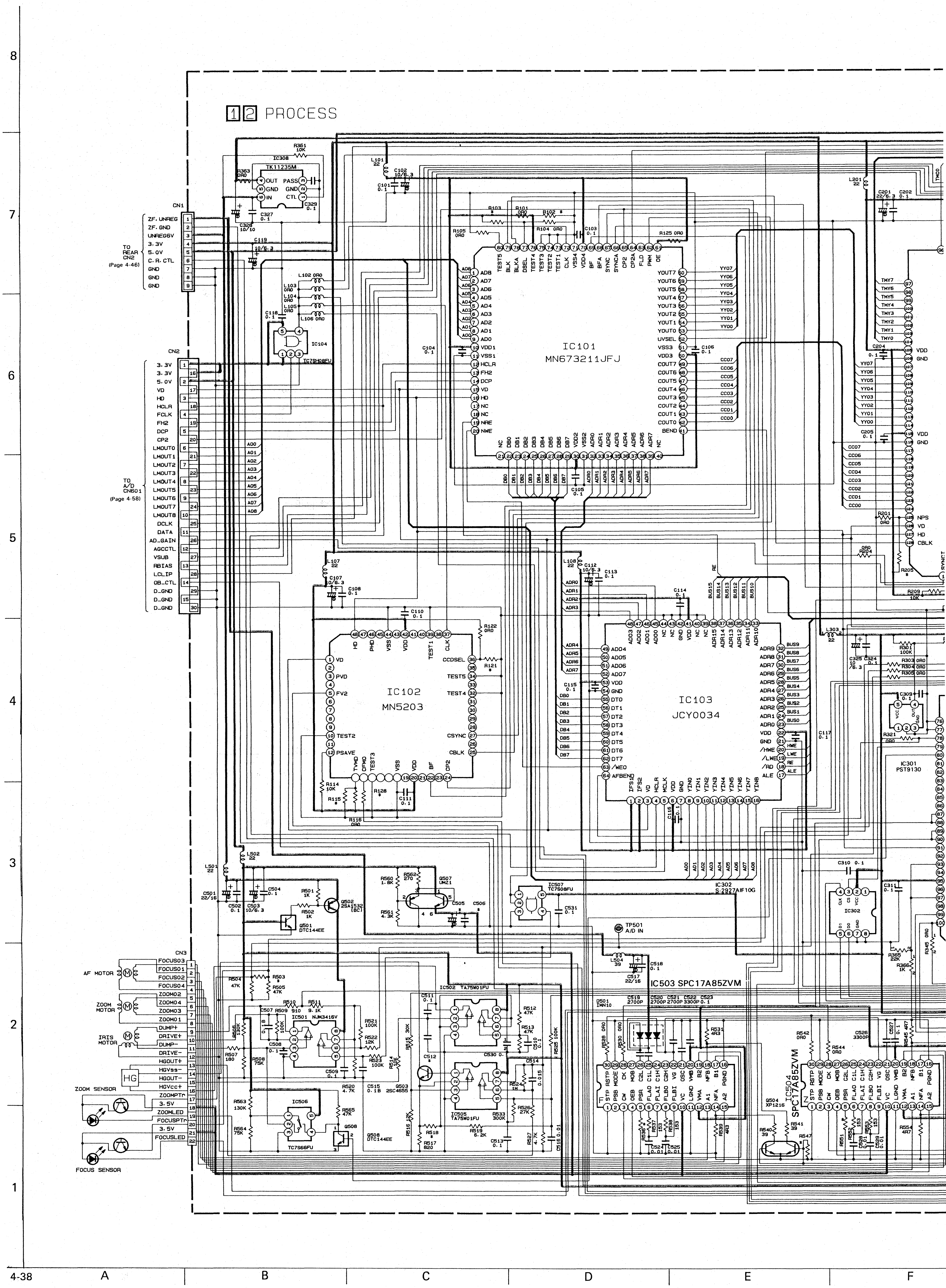

01 MAIN(PRE/REC)
IC601 AN3352FHP
D603 DAN222
R621 10
R620 560
C634 0.01
C633 0.01
C632 270p
C654 270p
C631 0.01
C630 270p
C629 0.01
C628 270p
R619 560
C627 0.01
C626 0.01
TP602 A CH1(F)
R622 1K
R623 1K
R624 10K
Q616 2SA1577(QR)
Q617 DTC144EE
Q618 DTC144EE
C635 0.01
L603 47
C636 10/6.3
C637 0.01
C638 10/6.3
L604 47
C639 0.1
C640 ＊
R625 ＊
A LOGIC
ARA1
ARA2
ARA3
ARA4
AHA1 AHA3
AHA2 AHA4
RA1
RA2
RA3
RA4
HA1 HA3
HA2 HA4
A AMP
A GCA
Y GCA
C GCA
C AMP
AGC
V LOGIC
C651 0.01
C642 0.01
C643 10/6.3
L605 47
R626 2.2K
R628 1.8K
C641 0.01
R634 5.6K
R635 ＊
R633 3.9K
C652 0.01
C644 0.01
R630 6.8K
C646 1.0
L606 47
C645 10/6.3
C649 0.01
C625 0.1
R618 270
＊C647 1.0
R617 510
Q615 2SD2114K(UV)
C624 1.0
Q613 XN4504
Q614 ＊
R616 510
C623 1.0
C622 1.0
C621 0.01
Q612 ＊
C616 0.01
C620 ＊
Q611 2SD2114K(UV)
C617 1.0
C619 ＊
C618 1.0
R615 510
Q610 2SD2114K(UV)
C615 0.01
C614 ＊
C611 0.01
C613 ＊
C612 1.0
R611 10
R612 10
R613 10
R614 10
D601 MA132WA
D602 MA132WA
Q603 Q604 2SA1577(QR)
R603 220
R604 1.5K
R601 10K
Q601 DTC144EE
R602 1K
R605 6.8K
Q605 UM6Z
C650 0.01
R632 ＊
C601 ＊
C603 0.01
R607 0Ω
R608 ＊
R631 1.8K
C653 0.01
C604 0.068
C602 0.1
R609 270
C605 27p
C610 1.0
Q606 XN4504
Q607 ＊
Q608 ＊
Q609 2SD2114K(UV)
R610 510
C608 1.0
L601 47
C606 10/6.3
C607 0.01
L602 47
C609 0.01
C648 10/6.8
TO SYSCON (Page 4-17,18)
H.REC_MUTE[H] SP1
A.HFF SP2
A.OVL SP3
V.REC_MUTE[H] SP4
V.HFF SP5
V.OVL SP6
V.REC[L] SP7
TO JIG CONNECTOR
CN9
A TP FM 3
V TP FM 1
TO AUDIO (Page 4-24)
A.PB_FM PA1
A.REC_FM AP1
A.GND PA2
TO F/E (Page 4-30)
GND[5.0] PF2
TO Y/C (Page 4-37)
V.REC_FM_ADJ YP1
V.REC_COL_ADJ YP2
A.REC_FM_ADJ YP5
A.FF_INV YP7
V.FF_INV YP6
V.REC_COL YP3
V.PB_COL PY3
V.TP FM PY1
V.REC_FM YP4
V.PB_FM PY2
V.GND YP9
V.REC[H] YP8
TO REAR CN1 (Page 4-46)
CN2
GND[5.0] 1
GND[5.0] 3
GND[5.0] 25
GND[5.0] 26
REG 3.5V 6
REG 5.0V 29
CN1
1 F.E
2 F.E
3 AV.GND
4 A CH3(S)
5 A CH3(F)
6 A CH4(S)
7 A CH4(F)
8 A CH1(S)
9 A CH1(F)
10 A CH2(S)
11 A CH2(F)
12 AV.GND
13 V CH3(S)
14 V CH3(F)
15 V CH4(S)
16 V CH4(F)
17 V CH1(S)
18 V CH1(F)
19 V CH2(S)
20 V CH2(F)
TO DRUM ASSY
5
4
3
2
1
A
B
C
D
E
F
G
H

4.14 Y/C SCHEMATIC DIAGRAM

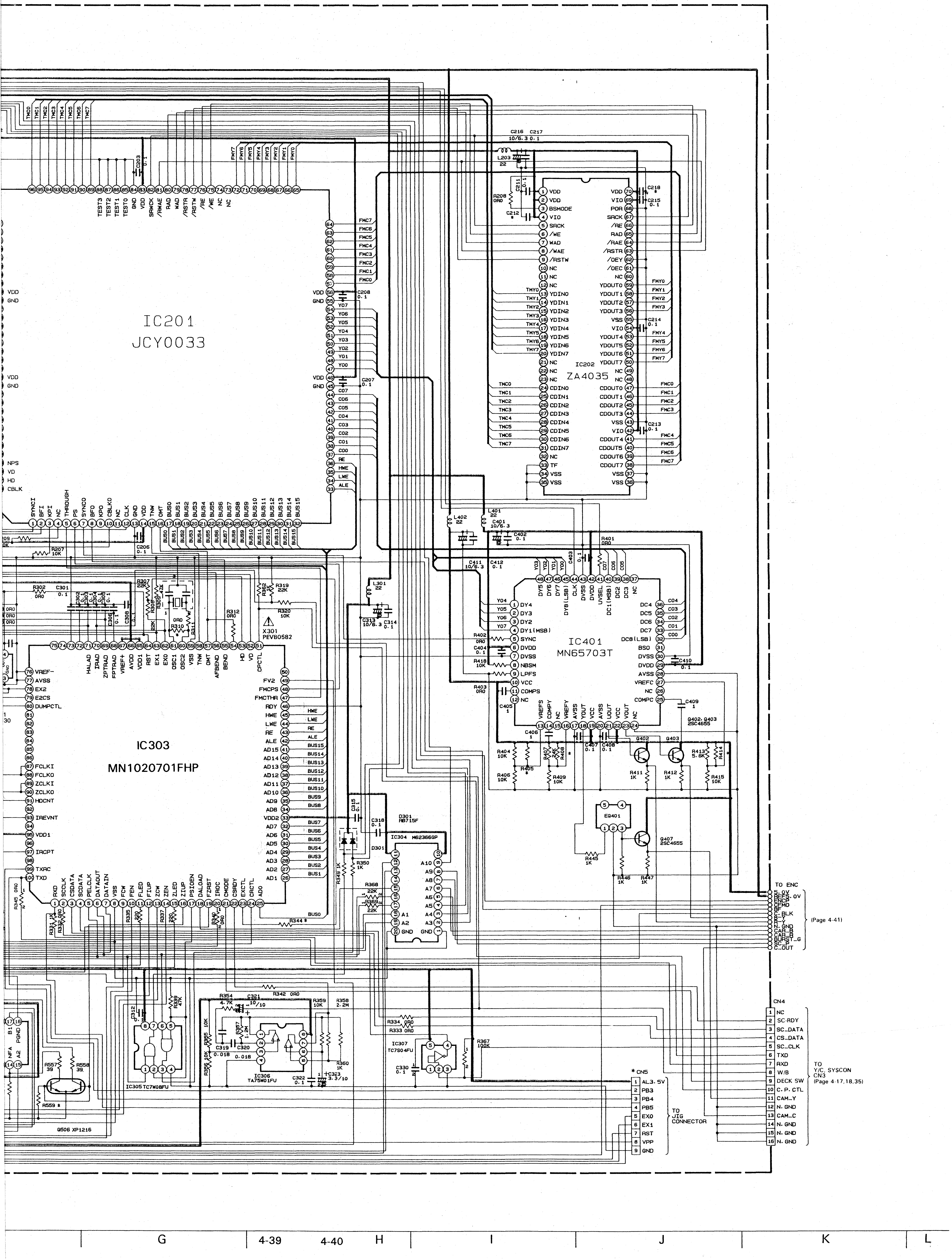

01 MAIN(Y/C)
TO SYSCON /SUB SYSCON (Page 4-17, 18,20)
EVR_LD SY12
S.DATA(Y) SY14
S.CLK(Y) SY13
V.PULSE_ON(H) SY1
V.FF SY7
A.FF SY20
V.PULSE SY6
V.ALL_MUTE SY8
V.PB(L) SY10
EP(H) SY3
DATE_FRING SY17
DATE_IND SY18
IND_CTL SY19
IND_FRING SY15
IND SY16
ASPECT(H) SY4
YNR.PULSE SY9
S.DET(H) YS3
C.SYNC YS1
V.FM_ENV YS2
* CN9
TO JIG CONNECTOR
C.KILLER 10
GND 15
C IN 14
Y IN 13
CN3
TO PROCESS CN4 (Page 4-40)
GND 1
GND 2
GND 3
GND 5
CAM_C 4
CAM_Y 6
CN2
TO REAR CN1 (Page 4-46)
GND(5.0) 26
V_OUT 4
Y_OUT 27
GND(5.0) 3
C_OUT 2
V_OUT(VF) 30
GND(VF) 7
REG_5.0V 5
V_GND 28
GND(5.0) 25
GND(5.0) 1
REG_5.0V 29
REG_3.5V 6
CN14
TO JIG CONNECTOR
Y_OUT 1
M.EMPHA_OUT 6
MOD_OUT 2
S.E.IN 3
PB_COL.IN 8
BURST.DEEMPHA 4
PB.FM.OUT 10
PB.FM.IN 5
REC_FM_OUT 7
NC 9
IC507 MM1117XF
IC508 MM1024AF
IC506 MM1166XF
IC501 JCP0054
IC512 TL8838F
IC505 TL8840F
CCD_COMB
IIL LOGIC
WF3
WF4
WF5
WF6
WF7
CLAMP
Y/C_MIX-6dB
REG_2.5V
Q530 UMZ1
Q521 UMW1
* Q520
Q522 UMB2
Q523 UMB2
Q540 2SA1774(QRS)
Q524 2SA1774 (QRS)
Q525 UMG2
Q519 2SC4617 (QRS)
Q518 2SC4617 (QRS)
Q532 UMZ1
Q533 2SA1774 (QRS)
D503 DAN222
X501 PEYB0549
EQ502 PELN0808-2
KILLER
KILLER DET
MUTE
AGC
AGC DET
SYNC SEP
CLEAR SYNC
N.C
APT
NL EMP DE EMP
DYNAMIC TRAP
YNR
SCA
S/N LPF
S/N SUB LPF
MAIN DE EMP
DE
-6dB
6dB
10dB
11.5dB
B.E
PB APC
REC APC
REC AFC
REC/PB DISCRI
ECL 1/2
4fsc
DOWN CONV
MAIN CONV
ACC DET
ALT SW
PHASE SW
X'TAL VCO
CR DET
BF# VCO
PULSE GEN
SW30
AUTO BALANCE
B.E/B.D
BPF
C LPF C DELAY
1
2
3
4
5
6
7
8
A
B
C
D
E
F

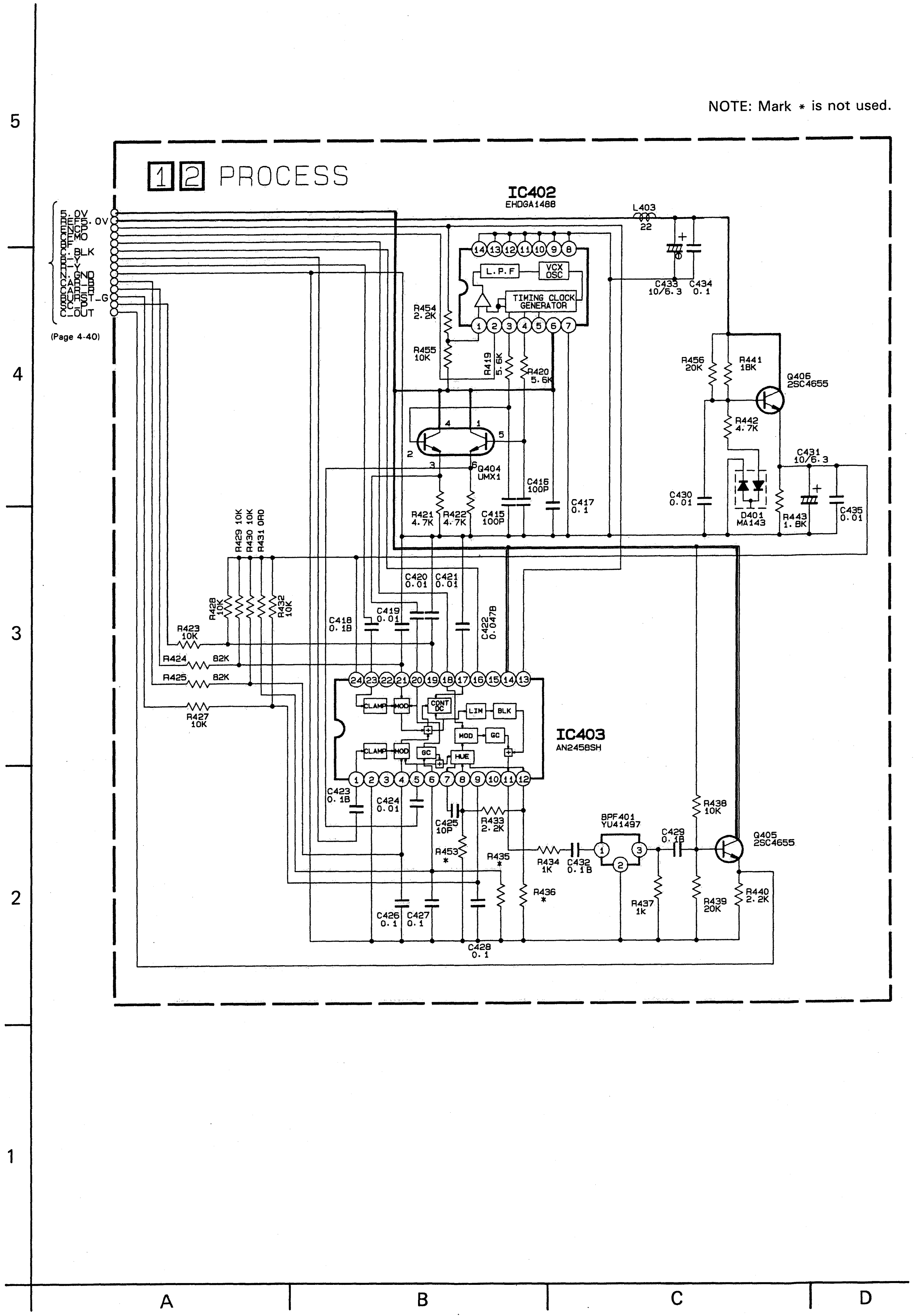
NOTE: Mark * is not used.


TO AUDIO
YA1 A.FD(R)
YA2 A.FD(L)
(Page 4-24)
YP1 V.REC_FM_ADJ
YP2 V.REC_COL_ADJ
YP5 A.REC_FM_ADJ
PY1 V.TP FM
PY2 V.PB_FM
PY3 V.PB_COL
YP9 V.GND
YP4 V.REC_FM
YP3 V.REC_COL
YP6 V.FF_INV
YP7 A.FF_INV
YP8 V.REC(H)
TO PRE/REC
(Page 4-33)
IC511 M62353GP
D-A
IC510 M62354GP
D-A
IC504 JCY0030
IC503 AN3396S
IC502 M52363VP
IC509 TC7WU04FU
IC501 PELN1016
E9501 PELN1015
WF1
WF2
*CN16
10 SYNC
2 OFF/ON
5 fsc
3 APC
1 BPF
12 BURST_DEEMPH
4 REC/PB
11 EVR
7 REG_5.0V
6 V.GND
8 PB OUT
9 PB IN
D504 DAP222
Q501
Q502 UMX2
Q503 2SA1577(GR)
Q504 UMX1
Q505 2SA1774(GRS)
Q506 2SC4617(GRS)
Q507 DTC144EE
Q508 2SC4617(GRS)
Q509 2SA1774(GRS)
Q510 2SC4617(GRS)
Q511 UMZ2
Q512 DTC144EE
Q513 2SC4617(GRS)
Q514 DTC144EE
Q515 2SA1774(GRS)
Q516 2SC4617(GRS)
Q517 2SC4617(GRS)
Q526 DTC144EE
Q527
Q528
Q529
Q536
Q537 DTA144EE
Q538 DTC144EE
Q539 DTC124EE
DE EMP MUTE
FB GCA
MAIN DE EMPH
MAIN EMPH
N/D CLIP
S DET
D.LIM
S/N SUB LPF
DE MOD
DOC STOP
DOC DET
EVR
FM MOD
BPF
ACC
ZH LPF
C ACC KILLER
C LPF C DELAY
PULSE GEN
CTL


12 PROCESS
CN1
TO REAR CN2 (Page 4-46)
ZF. UNREG
ZF. GND
UNREG6V
3.3V
5.0V
C.R.CTL
GND
CN2
TO A/D CN601 (Page 4-58)
3.3V
5.0V
VD
HD
HCLR
FCLK
FH2
DCP
CP2
LMOUT0
LMOUT1
LMOUT2
LMOUT3
LMOUT4
LMOUT5
LMOUT6
LMOUT7
LMOUT8
DCLK
DATA
AD_GAIN
AGCCTL
VSUB
RBIAS
LCLIP
OB_CTL
D_GND
CN3
AF MOTOR
ZOOM MOTOR
IRIS MOTOR
HG
ZOOM SENSOR
FOCUS SENSOR
FOCUS03
FOCUS01
FOCUS02
FOCUS04
ZOOM02
ZOOM04
ZOOM03
ZOOM01
DUMP+
DRIVE+
DUMP-
DRIVE-
HGOUT+
HGVss-
HGOUT-
HGVcc+
ZOOMPTr
3.5V
ZOOMLED
FOCUSPTr
FOCUSLED
IC308 TK11235M
IC104 TC7SH08FU
IC101 MN673211JFJ
IC102 MN5203
IC103 JCY0034
IC501 NJM3416V
IC502 TA75W01FU
IC505 TA75W01FU
IC506 TC7S66FU
IC507 TC7S08FU
IC503 SPC17A85ZVM
IC504 SPC17A85ZVM
IC302 S-2927AIF10G
IC301 PST9130
Q501 DTC144EE
Q502 2SA1532 (BC)
Q503 2SC4655
Q504 XP1216
Q507 UMZ1
Q508 DTC144EE
D501 1MN10
TP501 A/D IN
1
2
3
4
5
6
7
8
A
B
C
D
E
F

NOTE: Mark * is not used.


IC201
JCY0033
IC202
ZA4035
IC303
MN1020701FHP
IC401
MN65703T
IC304 M62366GP
IC305 TC7W08FU
IC306 TA75W01FU
IC307 TC7S04FU
Q402,Q403 2SC4655
Q407 2SC4655
Q506 XP1216
EQ401
D301 RB715F
X301 PEVB0582
L203 22
L301 22
L401 22
L402 22
TO ENC
(Page 4-41)
CN4
1 NC
2 SC-RDY
3 SC_DATA
4 CS_DATA
5 SC_CLK
6 TXD
7 RXD
8 W/B
9 DECK SW
10 C.P.CTL
11 CAM_Y
12 N.GND
13 CAM_C
14 N.GND
15 N.GND
16 N.GND
TO Y/C, SYSCON CN3 (Page 4-17,18,35)
*CN5
1 AL3.5V
2 PB3
3 PB4
4 PB5
5 EX0
6 EX1
7 RST
8 VPP
9 GND
TO JIG CONNECTOR
G
4-39
4-40
H
I
J
K
L



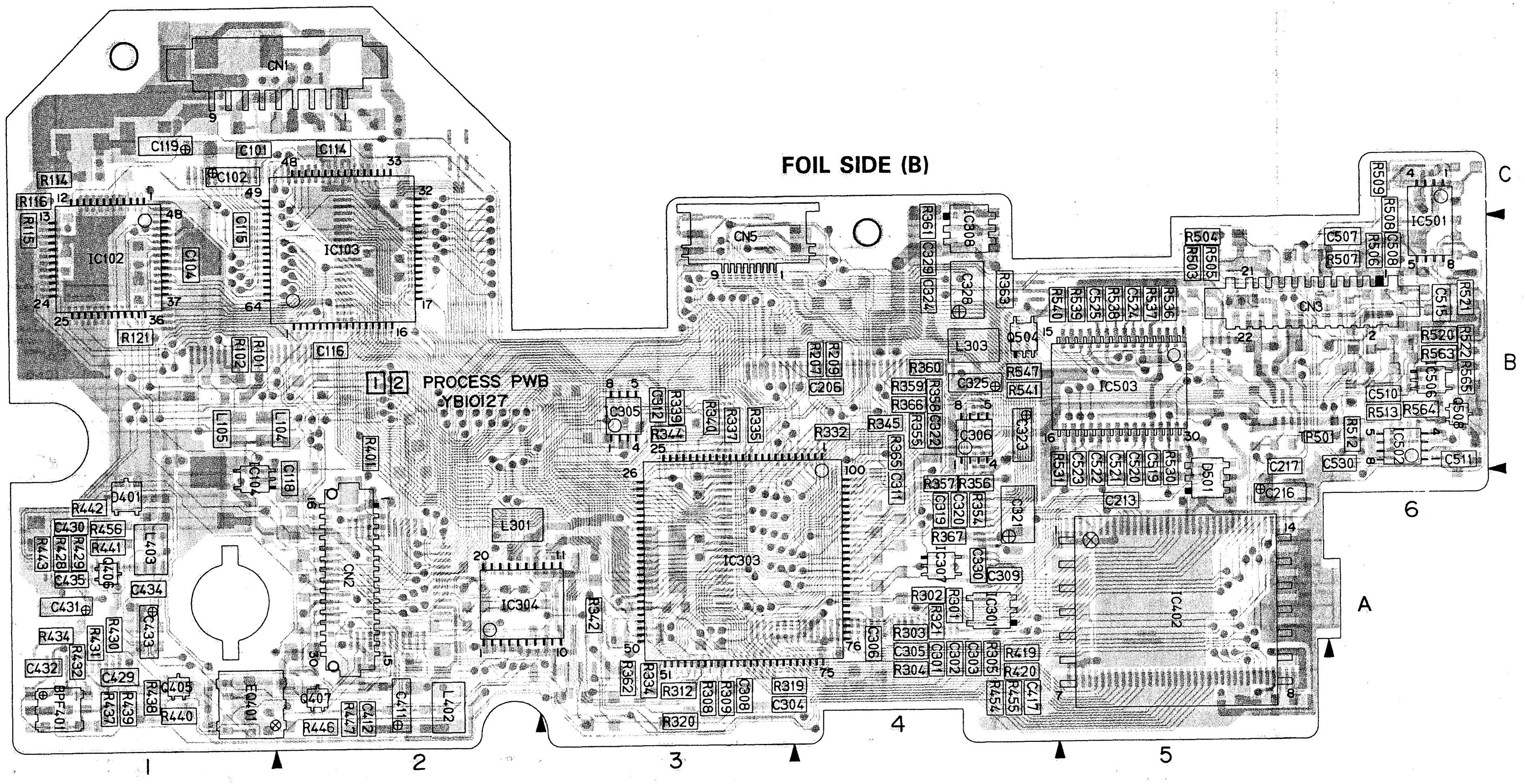
12 PROCESS
5.0V
REF5.0V
ENCP
CFMO
BF
C.BLK
B-Y
R-Y
N.GND
CAR_B
CAR_R
BURST_G
SC_P
C_OUT
(Page 4-40)
IC402
EHDGA1488
L.P.F
VCX OSC
TIMING CLOCK GENERATOR
L403
22
C433
10/6.3
C434
0.1
R454
2.2K
R455
10K
R419
5.6K
R420
5.6K
R456
20K
R441
18K
Q406
2SC4655
R442
4.7K
C431
10/6.3
Q404
UMX1
C416
100P
C417
0.1
C415
100P
R421
4.7K
R422
4.7K
C430
0.01
D401
MA143
R443
1.8K
C435
0.01
R429 10K
R430 10K
R431 0R0
R428
10K
R432
10K
R423
10K
R424
82K
R425
82K
R427
10K
C418
0.18
C419
0.01
C420
0.01
C421
0.01
C422
0.047B
IC403
AN2458SH
CLAMP
MOD
CONT OC
LIM
BLK
MOD
GC
HUE
C423
0.18
C424
0.01
C425
10P
R433
2.2K
R453
*
R435
*
R436
*
R434
1K
C432
0.1B
BPF401
YU41497
C429
0.1B
R438
10K
Q405
2SC4655
R437
1k
R439
20K
R440
2.2K
C426
0.1
C427
0.1
C428
0.1
5
4
3
2
1
A
B
C
D

NOTE: Mark * is not used.

4.16 PROCESS CIRCUIT BOARD

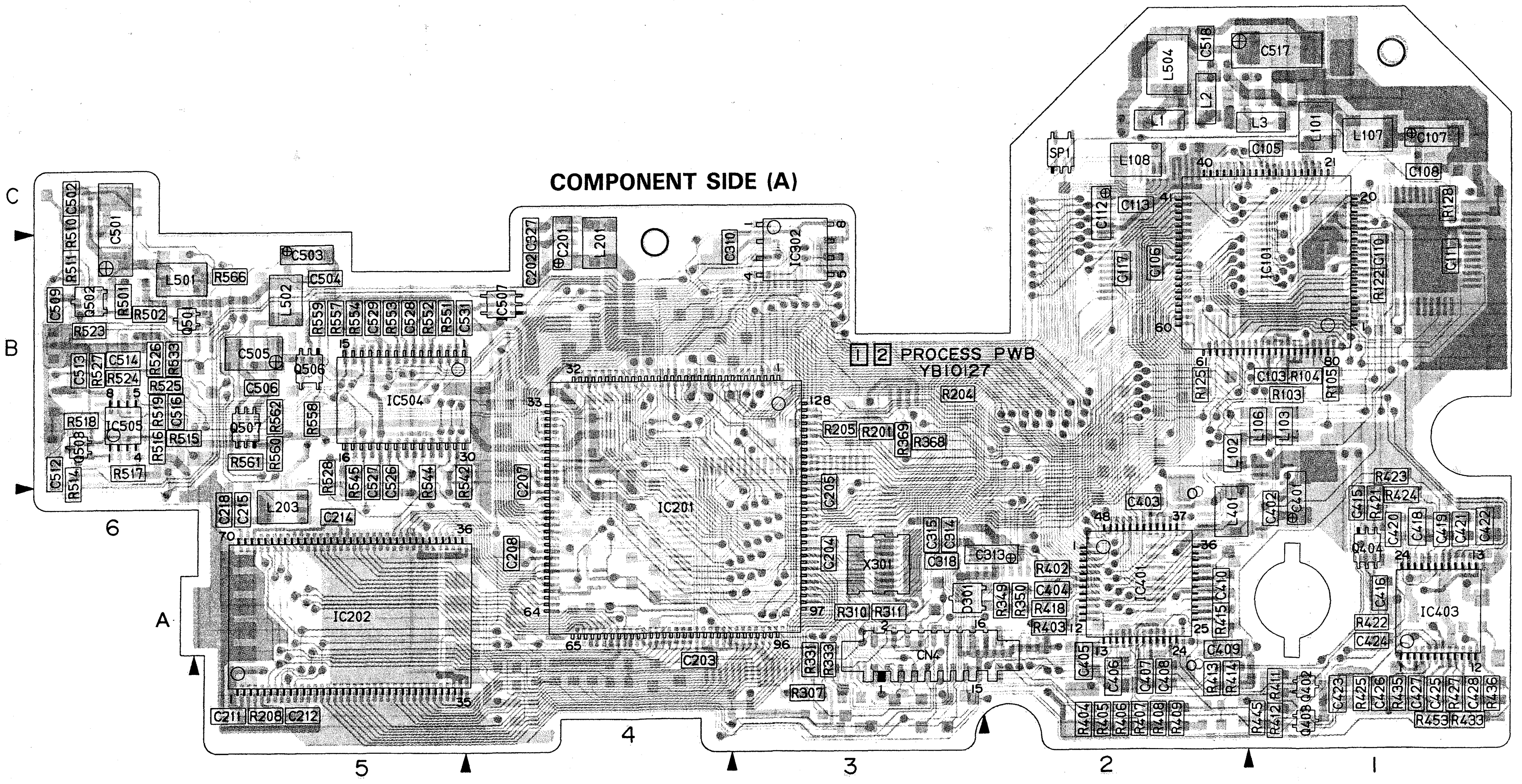
PARTS LOCATION GUIDE <PROCESS BOARD>

REF. NO.	LOCATION
I C	
IC101	A-1B
IC102	B-1B
IC103	B-2B
IC104	B-1B
IC201	A-4A
IC202	A-5A
IC301	B-4A
IC302	A-3B
IC303	B-3A
IC304	B-2A
IC305	B-3B
IC306	B-4B
IC307	B-4A
IC308	B-4A
IC401	A-2A
IC402	B-5A
IC403	A-1A
IC501	B-6B
IC502	B-6B
IC503	B-5B
IC504	A-5B
IC505	A-6B
IC506	B-6B
IC507	A-4B
REF. NO.	LOCATION
TRANSISTOR	
Q402	A-1A
Q403	A-1A
Q404	A-1A
Q405	B-1A
Q406	B-1A
Q407	B-2A
Q501	A-6B
Q502	A-6B
Q503	A-6B
Q504	B-4B
Q506	A-5B
Q507	A-5B
Q508	B-6B
REF. NO.	LOCATION
DIODE	
D301	A-3A
D401	B-1A
D501	B-5B
REF. NO.	LOCATION
RESISTOR	
R101	B-1B
R102	B-1B
R103	A-1B
R104	A-1B
R105	A-1B
R114	B-1C
R115	B-1B
R116	B-1C
R121	B-1B
R122	A-1B
R125	A-2B
R128	A-1C
R201	A-3B
R204	A-3B
R205	A-3B
R207	B-4B
R208	A-5A
R209	B-4B
R301	B-4A
R302	B-4A
R303	B-4A
R304	B-4A
R305	B-4A
R307	A-3A
R308	B-3A
R309	B-3A
R310	A-3A
R311	A-3A
R312	B-3A
R319	B-3A
R320	B-3A
R321	B-4A
R331	A-3A
R332	B-4B
R333	A-3A
R334	B-3A
R335	B-3B
R337	B-3B
R339	B-3B
R340	B-3B
R342	B-3A
R344	B-3B
R345	B-4B
R349	A-2A
R350	A-2A
R354	B-4A
R355	B-4B
R356	B-4A
R357	B-4A
R358	B-4B
R359	B-4B
R360	B-4B
R361	B-4B
R362	B-3A
R363	B-4B
R365	B-4B
R366	B-4B
R367	B-4A
R368	A-3B
R369	A-3B
R401	B-2B
R402	A-2A
R403	A-2A
R404	A-2A
R405	A-2A
R406	A-2A
R407	A-2A
R408	A-2A
R409	A-2A
R411	A-1A
R412	A-1A
R413	A-2A
R414	A-2A
R415	A-2A
R418	A-2A
R419	B-4A
R420	B-4A
R421	A-1A
R422	A-1A
R423	A-1B
R424	A-1A
R425	A-1A
R427	A-1A
R428	B-1A
R429	B-1A
R430	B-1A
R431	B-1A
R432	B-1A
R433	A-1A
R434	B-1A
R435	A-1A
R436	A-1A
R437	B-1A
R438	B-1A
R439	B-1A
R440	B-1A
R441	B-1A
R442	B-1A
R443	B-1A
R445	A-1A
R446	B-2A
R447	B-2A
R453	A-1A
R454	B-4A
R455	B-4A
R456	B-1A
R501	A-6B
R502	A-6B
R503	B-5B
R504	B-5B
R505	B-5B
R506	B-6B
R507	B-6B
R508	B-6B
R509	B-6C
R510	A-6B
R511	A-6B
R512	B-6B
R513	B-6B
R514	A-6A
R515	A-6B
R516	A-6B
R517	A-6B
R518	A-6B
R519	A-6B
R520	B-6B
R521	B-6B
R522	B-6B
R523	A-6B
R524	A-6B
R525	A-6B
R526	A-6B
R527	A-6B
R528	A-5B
R530	B-5B
R531	B-4B
R533	A-6B
R536	B-5B
R537	B-5B
R538	B-5B
R539	B-5B
R540	B-4B
R541	B-4B
R542	A-4B
R544	A-5B
R545	A-5B
R547	B-4B
R551	A-5B
R552	A-5B
R553	A-5B
R554	A-5B
R557	A-5B
R558	A-5B
R559	A-5B
R560	A-5B
R561	A-5B
R562	A-5B
R563	B-6B
R564	B-6B
R565	B-6B
R566	A-5B
REF. NO.	LOCATION
CAPACITOR	
C101	B-1C
C102	B-1C
C103	A-1B
C104	B-1B
C105	A-1C
C106	A-2B
C107	A-1C
C108	A-1C
C110	A-1B
C111	A-1B
C112	A-2C
C113	A-2C
C114	B-2C
C115	B-1B
C116	B-2B
C117	A-2B
C118	B-2B
C119	A-1C
C201	A-4B
C202	A-4B
C203	A-4A
C204	A-3A
C205	A-3A
C206	B-4B
C207	A-4B
C208	A-4A
C211	A-5A
C212	A-5A
C213	B-5A
C214	A-5A
C215	A-5A
C216	B-5A
C217	B-5A
C218	A-5A
C301	B-4A
C302	B-4A
C303	B-4A
C304	B-3A
C305	B-4A
C306	B-4A
C308	B-3A
C309	B-4A
C310	A-3B
C311	B-4A
C312	B-3B
C313	A-2A
C314	A-3A
C315	A-3A
C318	A-3A
C319	B-4A
C320	B-4A
C321	B-4A
C322	B-4B
C323	B-4B
C324	B-4B
C325	B-4B
C327	A-4B
C328	B-4B
C329	B-4B
C330	B-4A
C401	A-1B
C402	A-1B
C403	A-2A
C404	A-2A
C405	A-2A
C406	A-2A
C407	A-2A
C408	A-2A
C409	A-2A
C410	A-2A
C411	B-2A
C412	B-2A
C415	A-1A
C416	A-1A
C417	B-4A
C418	A-1A
C419	A-1A
C420	A-1A
C421	A-1A
C422	A-1A
C423	A-1A
C424	A-1A
C425	A-1A
C426	A-1A
C427	A-1A
C428	A-1A
C429	B-1A
C430	B-1A
C431	B-1A
C432	B-1A
C433	B-1A
C434	B-1A
C435	B-1A
C501	A-6B
C502	A-6C
C503	A-5B
C504	A-5B
C505	A-5B
C506	A-5B
C507	B-6B
C508	B-6B
C509	A-6B
C510	B-6B
C511	B-6B
C512	A-6B
C513	A-6B
C514	A-6B
C515	B-6B
C516	A-6B
C517	A-1C
C518	A-2C
C519	B-5B
C520	B-5B
C521	B-5B
C522	B-5B
C523	B-5B
C524	B-5B
C525	B-5B
C526	A-5B
C527	A-5B
C528	A-5B
C529	A-5B
C530	B-6B
C531	A-4B
REF. NO.	LOCATION
COIL	
L1	A-2C
L2	A-2C
L3	A-1C
L101	A-1C
L102	A-2B
L103	A-1B
L104	B-2B
L105	B-1B
L106	A-1B
L107	A-1C
L108	A-2C
L201	A-4A
L203	A-5A
L301	B-2A
L303	B-4B
L401	A-2B
L402	B-2A
L403	B-1A
L501	A-6B
L502	A-5B
L504	A-2C
REF. NO.	LOCATION
EQUALIZER	
E0401	B-1A
REF. NO.	LOCATION
BPF	
BPF401	B-1A
REF. NO.	LOCATION
RESONATOR	
X301	A-3A
REF. NO.	LOCATION
CONNECTOR	
CN1	B-2C
CN2	B-2A
CN3	B-5B
CN4	A-3A
CN5	B-3B
REF. NO.	LOCATION
TEST PIN	
TP501	B-5B



FOIL SIDE (B)

1 2 PROCESS PWB
YB10127
CN1
CN5
CN3
CN2
IC102
IC103
IC303
IC304
IC402
IC503
IC501
IC306
IC301
IC305
IC307
L301
L303
L402
A
B
C
1
2
3
4
5
6

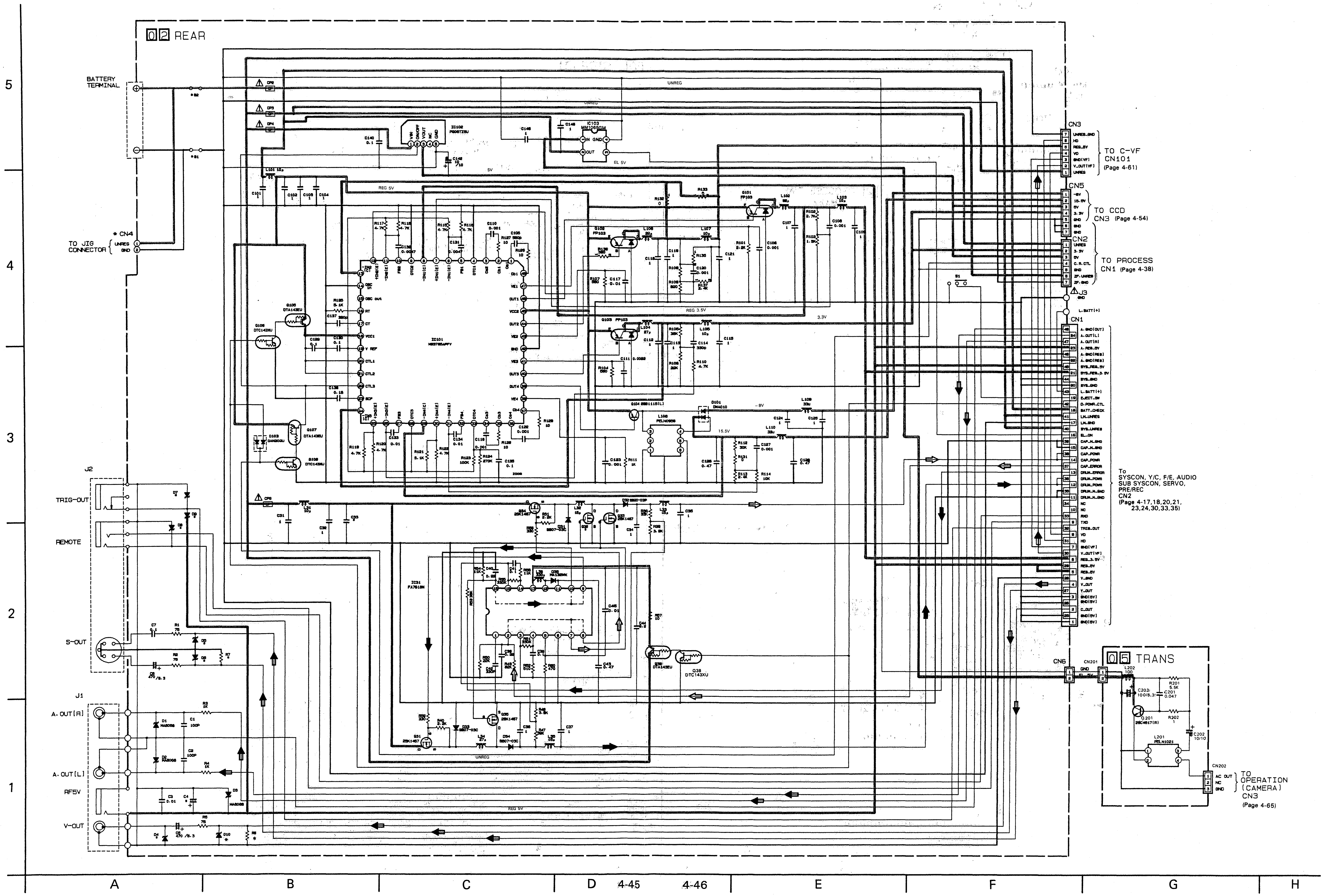


COMPONENT SIDE (A)

1 2 PROCESS PWB
YB10127
IC101
IC201
IC202
IC302
IC401
IC403
IC504
IC505
CN4
X301
SP1
L1
L2
L3
L101
L107
L108
L203
L501
L502
L504
A
B
C
1
2
3
4
5
6

4.17 REAR AND TRANS SCHEMATIC DIAGRAMS

NOTE: Mark ∗ is not used.

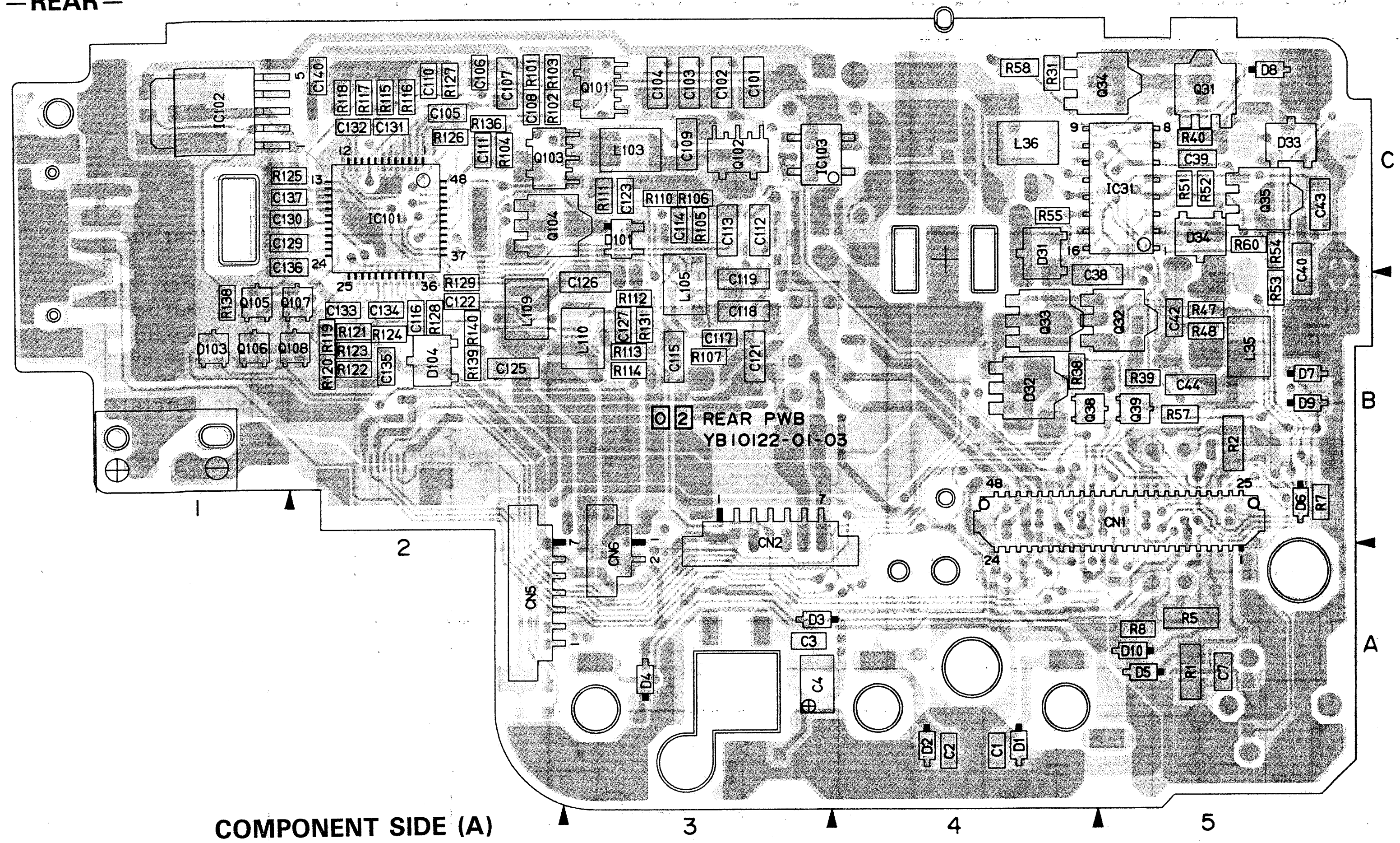


02 REAR
05 TRANS
BATTERY TERMINAL
∗ CN4
TO JIG CONNECTOR
UNREG
GND
J2
TRIG-OUT
REMOTE
S-OUT
J1
A. OUT [R]
A. OUT [L]
RF5V
V-OUT
IC101
IC102
IC103
IC31 FA7616N
UNREG
REG 5V
REG 3.5V
3.3V
EL 5V
CN3
UNREG_GND
HD
REG_5V
VD
GND(VF)
V_OUT(VF)
UNREG
TO C-VF CN101 (Page 4-61)
CN5
-8V
15.5V
5V
3.3V
GND
GND
GND
TO CCD CN3 (Page 4-54)
CN2
UNREG
3.3V
5V
C.R.CTL
GND
ZF.UNREG
ZF.GND
TO PROCESS CN1 (Page 4-38)
J3
GND
L.BATT(+)
CN1
A.GND(OUT)
A.OUT(L)
A.OUT(R)
A.REG_5V
A.GND(REG)
A.GND(REG)
SYS_REG_5V
SYS_REG_3.5V
SYS_GND
SYS_GND
L.BATT(+)
EJECT_SW
D.POWR_CTL
BATT_CHECK
LM_UNREG
LM_GND
SYS_UNREG
EL_ON
CAP_M_GND
CAP_M_GND
CAP_POWR
CAP_POWR
CAP_ERROR
DRUM_ERROR
DRUM_POWR
DRUM_POWR
DRUM_M_GND
DRUM_M_GND
NC
NC
RXD
TXD
TRIG_OUT
VD
HD
GND(VF)
V_OUT(VF)
REG_3.5V
REG_5V
REG_5V
V_GND
V_OUT
Y_OUT
GND(5V)
GND(5V)
C_OUT
GND(5V)
GND(5V)
To SYSCON, Y/C, F/E, AUDIO SUB SYSCON, SERVO, PRE/REC CN2 (Page 4-17,18,20,21, 23,24,30,33,35)
CN6
CN201
GND
EL_5V
L202 100
R201 5.5K
C203 100/6.3
C201 0.047
Q201
R202 1
C202 10/10
L201
CN202
AC OUT
NC
GND
TO OPERATION (CAMERA) CN3 (Page 4-65)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.18 REAR AND TRANS CIRCUIT BOARDS

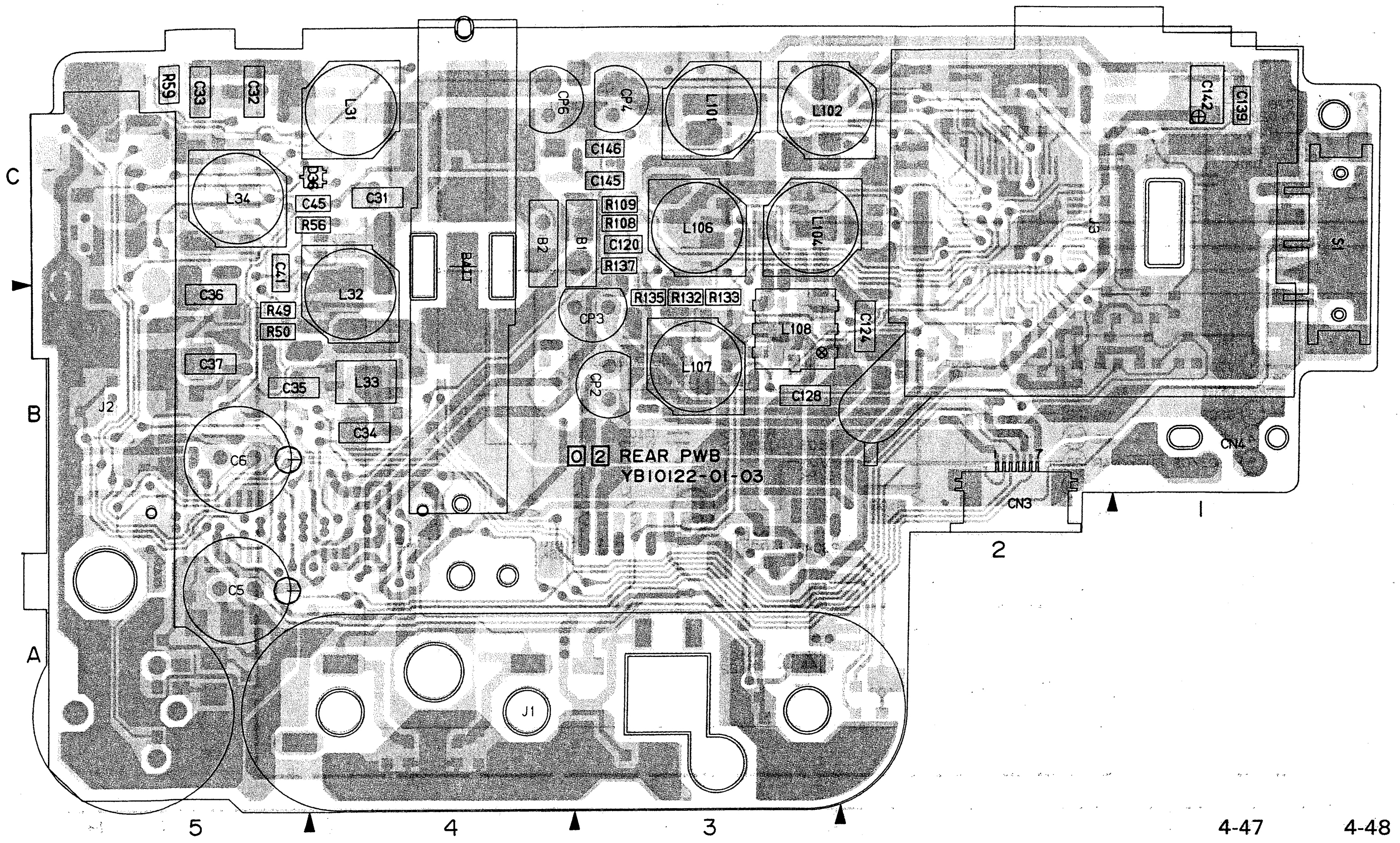
—REAR—

FOIL SIDE (B)



02 REAR PWB
YB10122-01-03
IC101
IC102
IC31
CN1
CN2
CN5
CN6
L36
L103
L105
L109
L110
L35
C
B
A
1
2
3
4
5

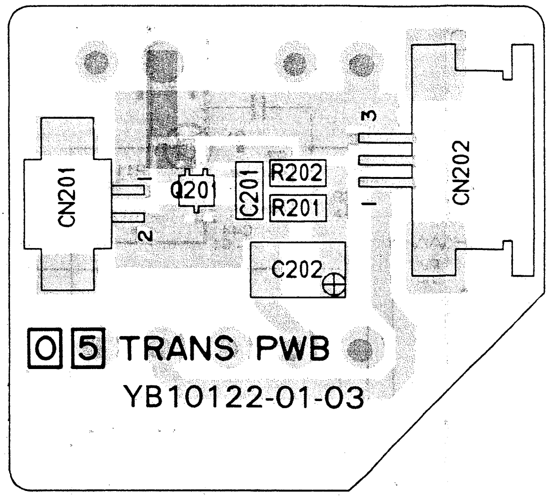
COMPONENT SIDE (A)



02 REAR PWB
YB10122-01-03
L31
L32
L33
L34
L101
L102
L106
L107
L108
CN3
CN4
S1
J1
J2
C5
C6
CP2
CP3
C
B
A
1
2
3
4
5

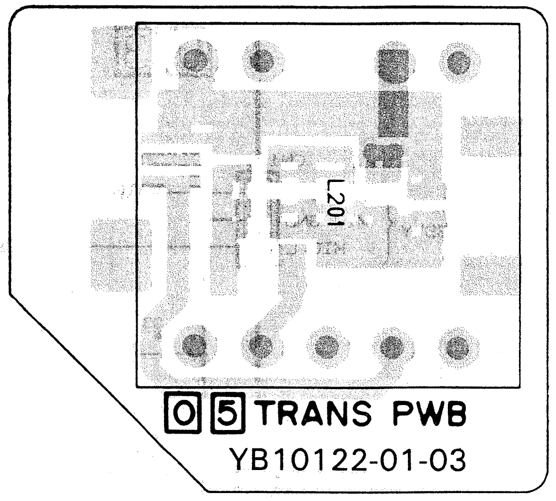
—TRANS—

FOIL SIDE (B)



05 TRANS PWB
YB10122-01-03
CN201
CN202
Q201
C201
R202
R201
C202
2
3
1

COMPONENT SIDE (A)



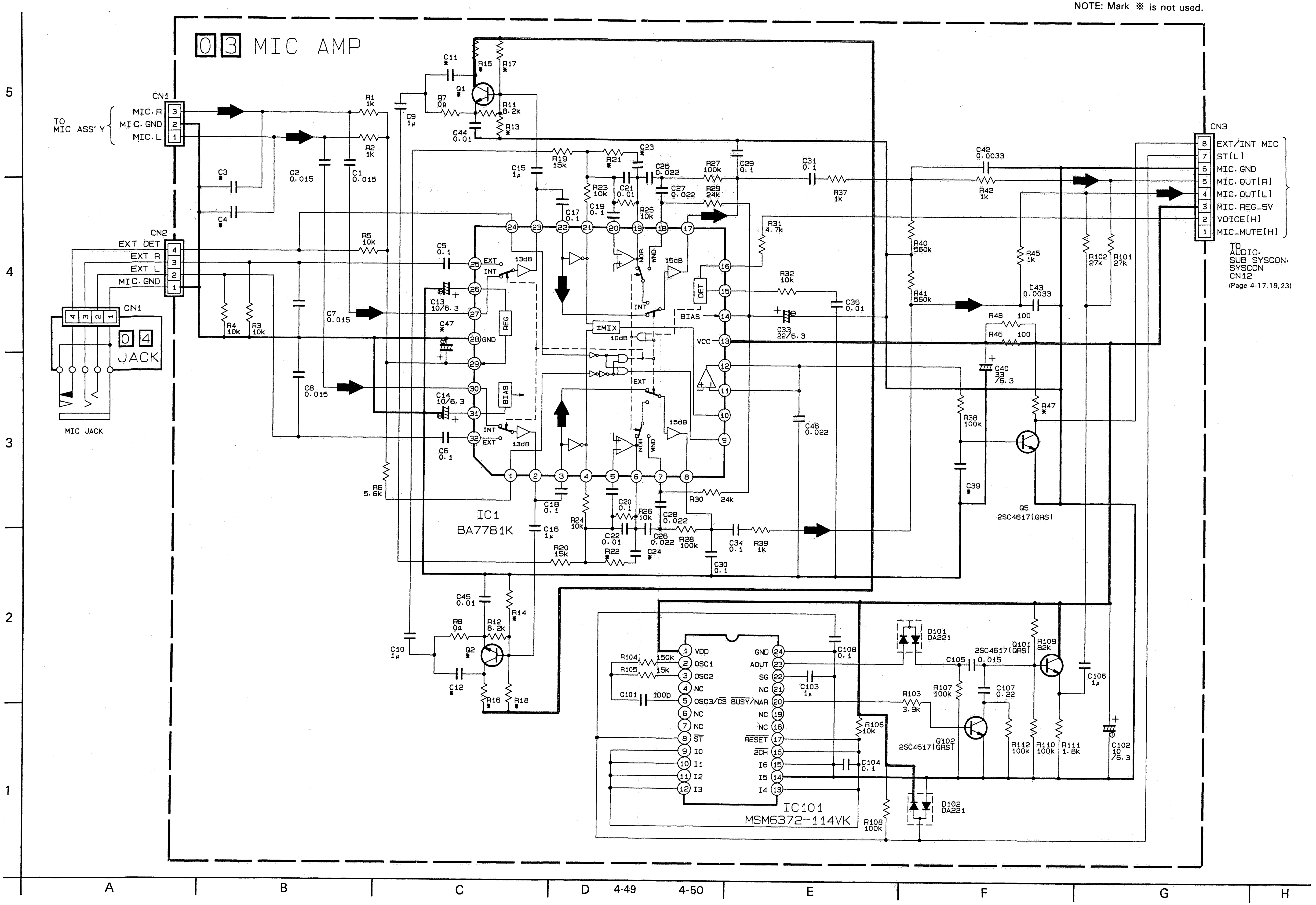
05 TRANS PWB
YB10122-01-03
L201

PARTS LOCATION GUIDE <REAR BOARD>

REF. NO.	LOCATION
I C	
IC31	B-5C
IC101	B-2C
IC102	B-1C
IC103	B-3C
TRANSISTOR	
Q31	B-5C
Q32	B-5B
Q33	B-4B
Q34	B-5C
Q35	B-5C
Q38	B-4B
Q39	B-5B
Q101	B-3C
Q102	B-3C
Q103	B-2C
Q104	B-2C
Q105	B-1B
Q106	B-1B
Q107	B-2B
Q108	B-2B
DIODE	
D1	B-4A
D2	B-4A
D3	B-3A
D4	B-3A
D5	B-5A
D6	B-5B
D7	B-5B
D8	B-5C
D9	B-5B
D10	B-5A
D31	B-4C
D32	B-4B
D33	B-5C
D34	B-5C
D36	A-4C
D101	B-3C
D103	B-1B
D104	B-2B
RESISTOR	
R1	B-5A
R2	B-5B
R5	B-5A
R7	B-5B
R8	B-5A
R31	B-4C
R38	B-4B
R39	B-5B
R40	B-5C
R47	B-5B
R48	B-5B
R49	A-5B
R50	A-5B
R51	B-5C
R52	B-5C
R53	B-5B
R54	B-5C
R55	B-4C
R56	A-4C
R57	B-5B
R58	B-4C
R59	A-5C
R60	B-5C
R101	B-2C
R102	B-2C
R103	B-2C
R104	B-2C
R105	B-3C
R106	B-3C
R107	B-3B
R108	A-3C
R109	A-3C
R110	B-3C
R111	B-3C
R112	B-3B
R113	B-3B
R114	B-3B
R115	B-2C
R116	B-2C
R117	B-2C
R118	B-2C
R119	B-2B
R120	B-2B
R121	B-2B
R122	B-2B
R123	B-2B
R124	B-2B
R125	B-1C
R126	B-2C
R127	B-2C
R128	B-2B
R129	B-2B
R131	B-3B
R132	A-3B
R133	A-3B
R134	A-3B
R135	A-3B
R136	B-2C
R137	A-3C
R138	B-1B
R139	B-2B
R140	B-2B
CAPACITOR	
C1	B-4A
C2	B-4A
C3	B-3A
C4	B-3A
C7	B-5A
C31	A-4C
C32	A-5C
C33	A-5C
C34	A-4B
C35	A-5B
C36	A-5B
C37	A-5B
C38	B-5B
C39	B-5C
C40	B-5C
C41	A-5C
C42	B-5B
C43	B-5C
C44	B-5B
C45	A-4C
C101	B-3C
C102	B-3C
C103	B-3C
C104	B-3C
C105	B-2C
C106	B-2C
C107	B-2C
C108	B-2C
C109	B-3C
C110	B-2C
C111	B-2C
C112	B-3C
C113	B-3C
C114	B-3C
C115	B-3B
C116	B-2B
C117	B-3B
C118	B-3B
C119	B-3B
C120	A-3C
C121	B-3B
C122	B-2B
C123	B-3C
C124	A-2B
C125	B-2C
C126	B-3B
C127	B-3B
C128	A-3B
C129	B-1C
C130	B-1C
C131	B-2C
C132	B-2C
C133	B-2B
C134	B-2B
C135	B-2B
C136	B-1C
C137	B-1C
C138	A-3B
C139	A-1C
C140	B-2C
C142	A-1C
C145	A-3C
C146	A-3C
COIL	
L1	B-3A
L31	A-4C
L32	A-4B
L33	A-4B
L34	A-5C
L35	B-5B
L36	B-4C
L101	A-3C
L102	A-3C
L103	B-3C
L104	A-3C
L105	B-3B
L106	A-3C
L107	A-3B
L108	A-3B
L109	B-2B
L110	B-3B
CONNECTOR	
CN1	B-5B
CN2	B-3A
CN3	A-2B
CN4	A-1B
CN5	B-2A
CN6	B-3A
SWITCH	
S1	A-1C
CP	
CP2	A-3B
CP3	A-3B
CP4	A-3C
CP6	A-4C

4.19 MIC AMP AND JACK SCHEMATIC DIAGRAMS

NOTE: Mark ※ is not used.

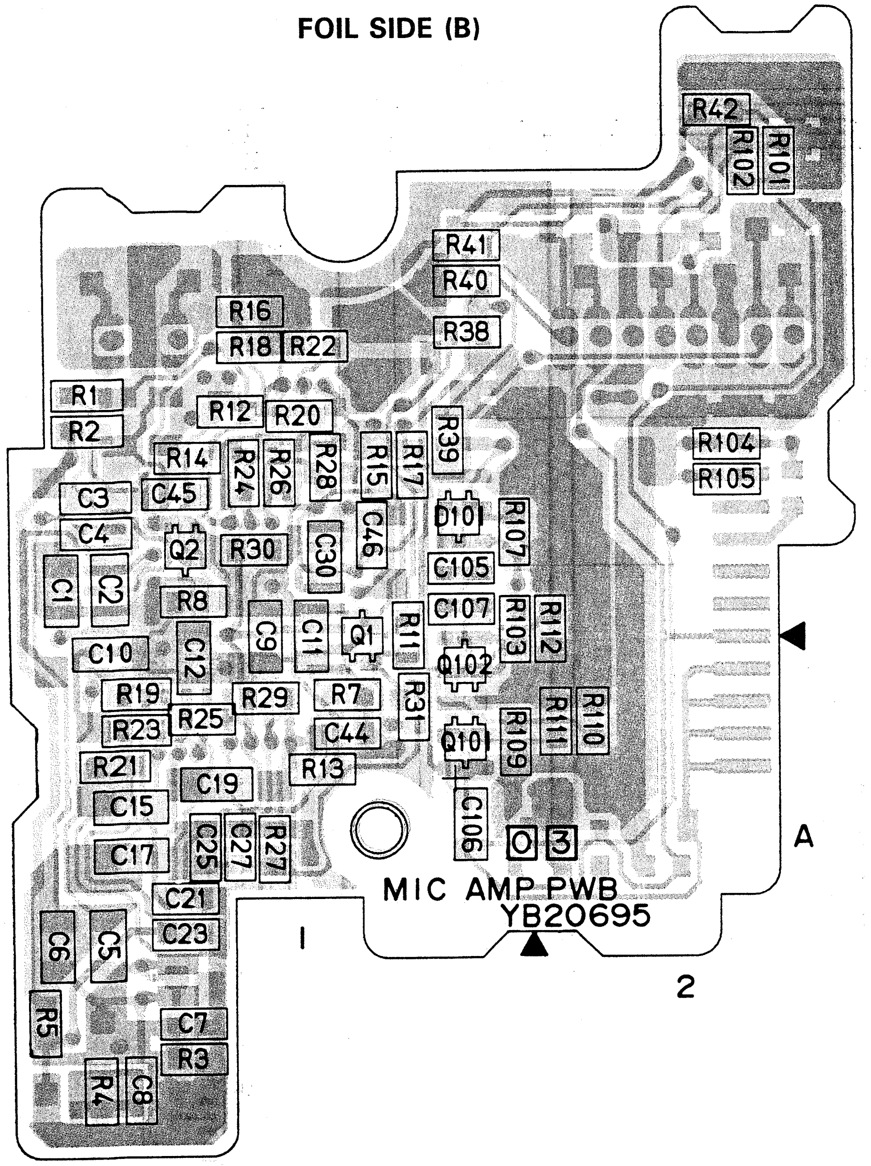


03 MIC AMP
04 JACK
TO MIC ASS' Y
CN1
MIC.R
MIC.GND
MIC.L
CN2
EXT DET
EXT R
EXT L
MIC.GND
MIC JACK
C3 ※
C4 ※
C2 0.015
C1 0.015
R1 1k
R2 1k
R3 10k
R4 10k
R5 10k
R6 5.6k
C5 0.1
C6 0.1
C7 0.015
C8 0.015
C9 1μ
C10 1μ
C11 ※
C12 ※
C13 10/6.3
C14 10/6.3
C15 1μ
C16 1μ
C17 0.1
C18 0.1
C19 0.1
C20 0.1
C21 0.01
C22 0.01
C23 ※
C24 ※
C25 0.022
C26 0.022
C27 0.022
C28 0.022
C29 0.1
C30 0.1
C31 0.1
C33 22/6.3
C34 0.1
C36 0.01
C39 ※
C40 33/6.3
C42 0.0033
C43 0.0033
C44 0.01
C45 0.01
C46 0.022
C47 ※
Q1 ※
Q2 ※
R7 0Ω
R8 0Ω
R11 8.2k
R12 8.2k
R13 ※
R14 ※
R15 ※
R16 ※
R17 ※
R18 ※
R19 15k
R20 15k
R21 ※
R22 ※
R23 10k
R24 10k
R25 10k
R26 10k
R27 100k
R28 100k
R29 24k
R30 24k
R31 4.7k
R32 10k
R37 1k
R38 100k
R39 1k
R40 560k
R41 560k
R42 1k
R45 1k
R46 100
R47 ※
R48 100
R101 27k
R102 27k
EXT
INT
13dB
15dB
REG
BIAS
DET
GND
VCC
±MIX
10dB
NOR
WND
IC1 BA7781K
Q5 2SC4617(QRS)
CN3
EXT/INT MIC
ST[L]
MIC.GND
MIC.OUT[R]
MIC.OUT[L]
MIC.REG_5V
VOICE[H]
MIC_MUTE[H]
TO AUDIO·SUB SYSCON, SYSCON CN12
(Page 4-17,19,23)
IC101 MSM6372-114VK
VDD
OSC1
OSC2
NC
OSC3/CS
NC
NC
ST
I0
I1
I2
I3
GND
AOUT
SG
NC
BUSY/NAR
NC
NC
RESET
2CH
I6
I5
I4
R104 150k
R105 15k
C101 100p
C103 1μ
C104 0.1
C105 0.015
C106 1μ
C107 0.22
C108 0.1
C102 10/6.3
R103 3.9k
R106 10k
R107 100k
R108 100k
R109 82k
R110 100k
R111 1.8k
R112 100k
D101 DA221
D102 DA221
Q101 2SC4617(QRS)
Q102 2SC4617(QRS)
5
4
3
2
1
A
B
C
D
E
F
G
H

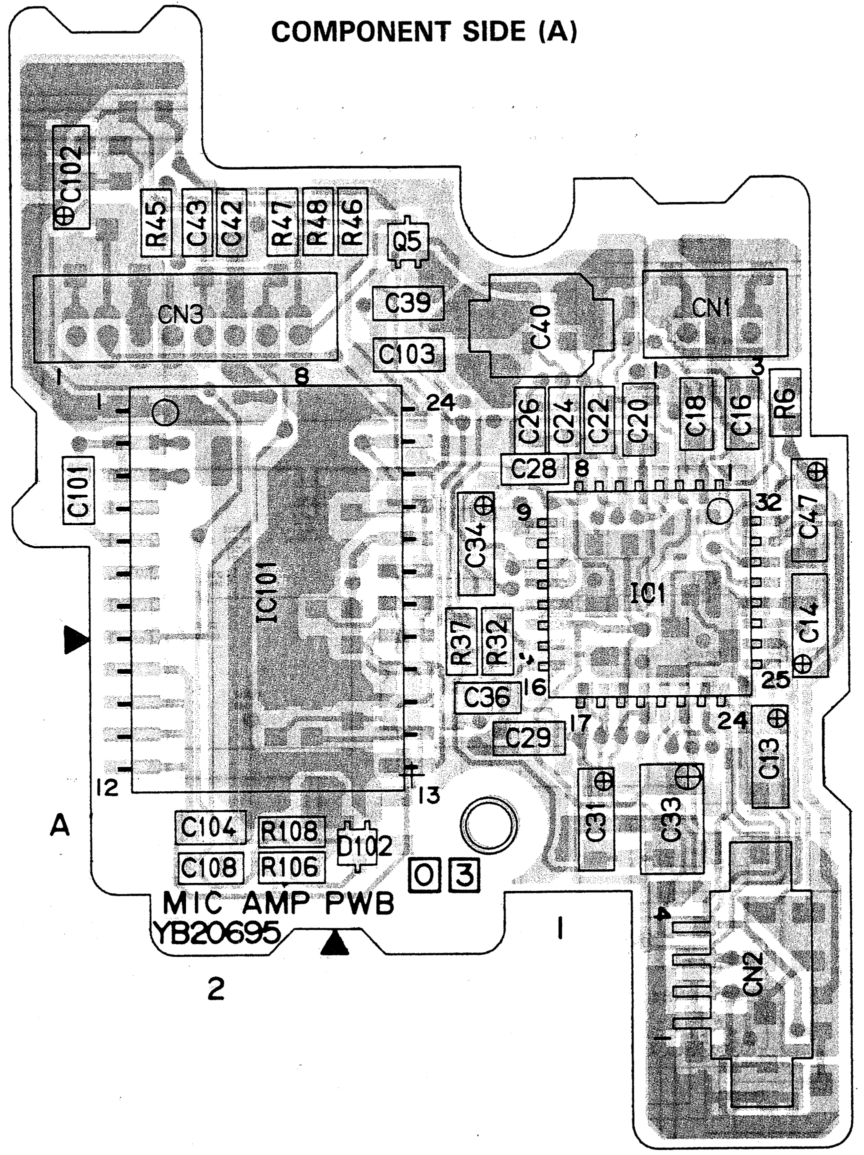
4.20 MIC AMP, JACK AND UPPER DRUM CIRCUIT BOARDS

—MIC AMP—

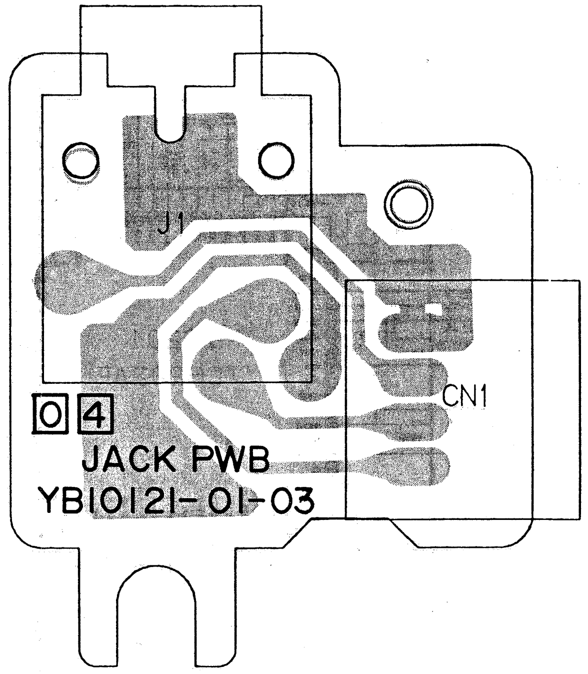
FOIL SIDE (B)


B
A
I
2
R42
R102
R101
R41
R40
R38
R16
R18
R22
R1
R2
R12
R20
R14
R24
R26
R28
R15
R17
R39
R104
R105
C3
C45
C4
Q2
R30
C30
C46
D101
R107
C105
C1
C2
R8
C9
C11
Q1
R11
C107
R103
R112
C10
C12
R19
R29
R7
Q102
R31
R23
R25
C44
R109
R111
R110
R21
R13
Q101
C15
C19
C106
C17
C25
C27
R27
03
C21
MIC AMP PWB
YB20695
C23
C6
C5
R5
C7
R3
R4
C8

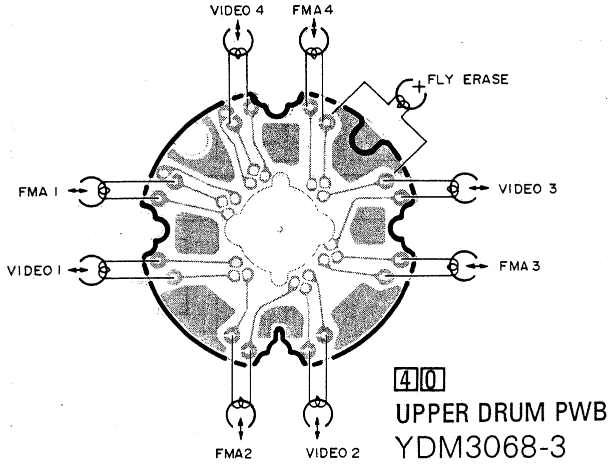
COMPONENT SIDE (A)


B
A
I
2
C102
R45
C43
C42
R47
R48
R46
Q5
CN3
C39
C103
C40
CN1
1
8
24
C26
C24
C22
C20
C18
C16
R6
C28
C101
C34
C47
IC101
IC1
R37
R32
C14
C36
C29
C13
12
13
C31
C33
C104
R108
D102
C108
R106
MIC AMP PWB
YB20695
03
CN2
4
1

—JACK—


J1
CN1
04
JACK PWB
YB10121-01-03

—UPPER DRUM—

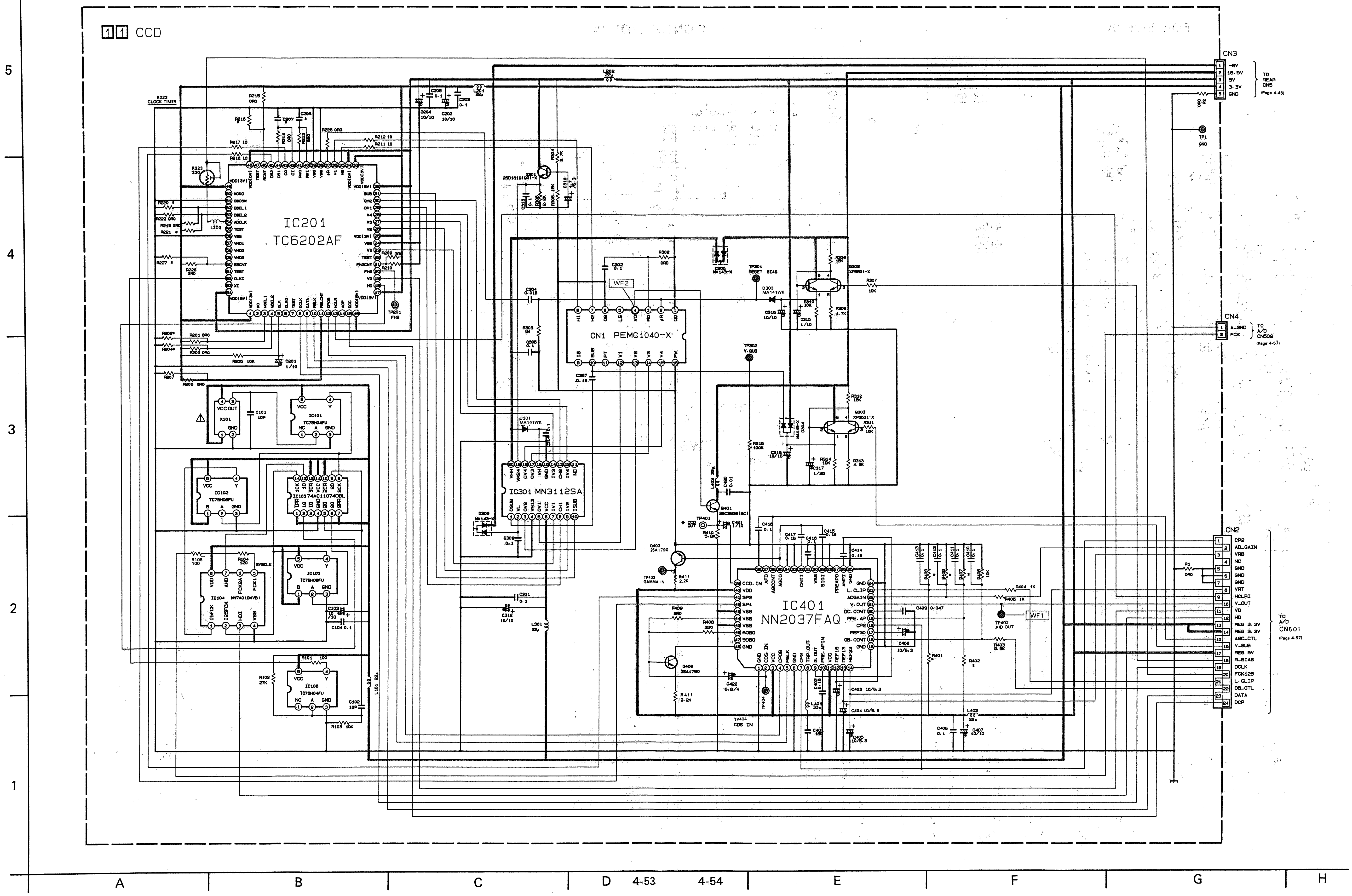

VIDEO 4
FMA4
FLY ERASE
FMA 1
VIDEO 3
VIDEO 1
FMA 3
FMA2
VIDEO 2
40
UPPER DRUM PWB
YDM3068-3

PARTS LOCATION GUIDE <MIC AMP BOARD>

REF. NO.	LOCATION	REF. NO.	LOCATION	R17	B-1B	R37	A-1A	R107	B-1B	C9	B-1B	C25	B-1A	C47	A-1B
I C		RESISTOR		R18	B-1B	R38	B-1B	R108	A-2A	C10	B-1A	C26	A-1B	C101	A-2B
IC1	A-1B	R1	B-1B	R19	B-1A	R39	B-1B	R109	B-1A	C11	B-1B	C27	B-1A	C102	A-2B
IC101	A-2A	R2	B-1B	R20	B-1B	R40	B-1B	R110	B-2A	C12	B-1A	C28	A-1B	C103	A-1B
REF. NO.	LOCATION	R3	B-1A	R21	B-1A	R41	B-1B	R111	B-2A	C13	A-1A	C29	A-1A	C104	A-2B
TRANSISTOR		R4	B-1A	R22	B-1B	R42	B-2B	R112	B-2B	C14	A-1B	C30	B-1B	C105	B-1B
Q2	B-1B	R5	B-1A	R23	B-1A	R45	A-2B	REF. NO.	LOCATION	C15	B-1A	C31	A-1A	C106	B-1A
Q4	A-1B	R6	A-1B	R24	B-1A	R46	A-1B	CAPACITOR		C16	A-1B	C33	A-1A	C107	B-1B
Q101	B-1A	R7	B-1A	R25	B-1A	R47	A-2B	C1	B-1B	C17	B-1A	C36	A-1A	C108	A-2B
Q102	B-1A	R8	B-1B	R26	B-1B	R48	A-2B	C2	B-1B	C18	A-1B	C39	A-1B	REF. NO.	LOCATION
REF. NO.	LOCATION	R11	B-1B	R27	B-1A	R101	B-2B	C3	B-1B	C19	B-1A	C40	A-1B	CONNECTOR	
DIODE		R12	B-1B	R28	B-1B	R102	B-2B	C4	B-1B	C20	A-1B	C42	A-2B	CN1	A-1B
D101	B-1B	R13	B-1A	R29	B-1A	R103	B-1B	C5	B-1B	C21	B-1A	C43	A-2B	CN2	A-1A
D102	A-1A	R14	B-1B	R30	B-1B	R104	B-2B	C6	B-1B	C22	A-1B	C44	B-1A	CN3	A-2B
		R15	B-1B	R31	B-1A	R105	B-2B	C7	B-1B	C23	B-1A	C45	B-1B		
		R16	B-1B	R32	A-1A	R106	B-2A	C8	B-1B	C24	A-1B	C46	B-1B		

4.21 CCD SCHEMATIC DIAGRAM

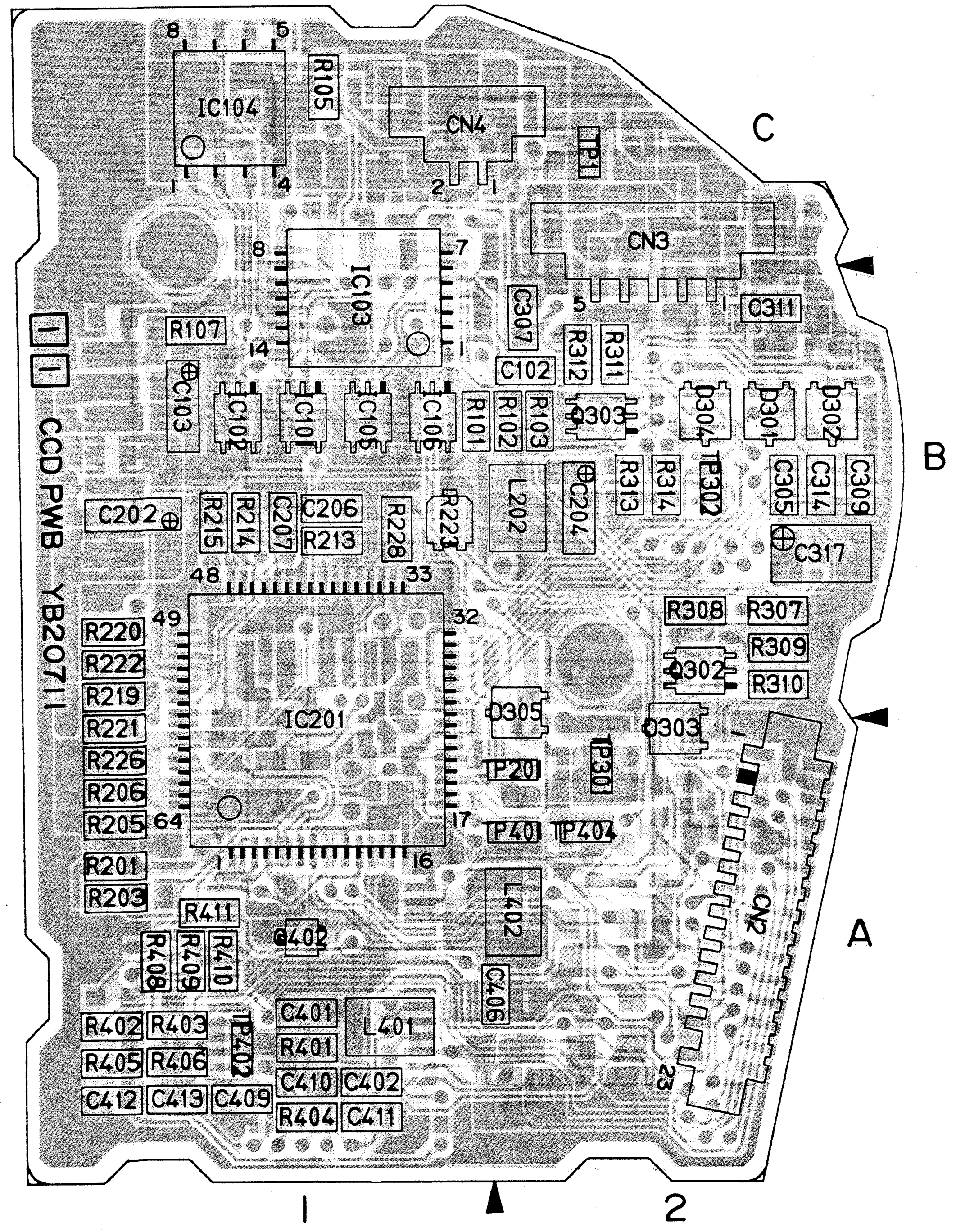
NOTES: 1. *Mark * is not used.*
2. *A DC-DC converter is included in the IC of this CCD circuit. Use ample care when checking the voltages. Even a brief shorting of the pins can destroy the IC.*



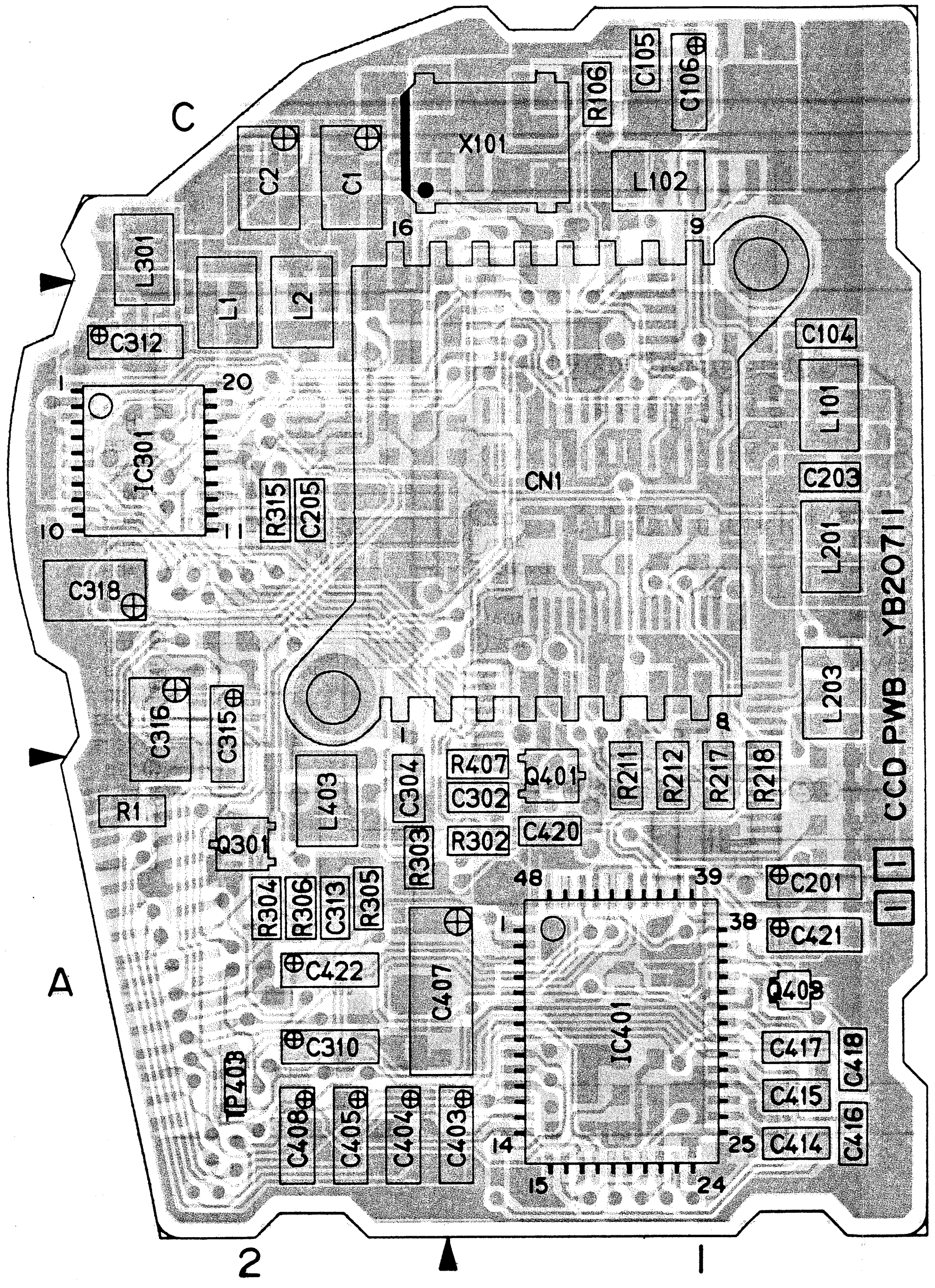
11 CCD
IC201 TC6202AF
CN1 PEMC1040-X
IC301 MN3112SA
IC401 NN2037FAQ
X101
IC101 TC7SH04FU
IC102 TC7SH08FU
IC103 74AC11074DBL
IC104 MN7A010MVB1
IC105 TC7SH08FU
IC106 TC7SH04FU
Q301 2SD1819(QR)-X
Q302 XP6501-X
Q303 XP6501-X
Q401 2SC3936(BC)
Q402 2SA1790
Q403 2SA1790
D301 MA141WK
D302 MA143-X
D303 MA141WK
D305 MA143-X
TP1 GND
TP201 FH2
TP301 RESET BIAS
TP302 V.SUB
TP401 CCD OUT
TP402 A/D OUT
TP403 GAMMA IN
TP404 CDS IN
WF1
WF2
R223 CLOCK TIMER
CN3
1 -8V
2 16.5V
3 5V
4 3.3V
5 GND
TO REAR CN5 (Page 4-46)
CN4
1 A_GND
2 FCK
TO A/D CN502 (Page 4-57)
CN2
1 CP2
2 AD_GAIN
3 VRB
4 NC
5 GND
6 GND
7 GND
8 VRT
9 HCLRI
10 V_OUT
11 VD
12 HD
13 REG 3.3V
14 REG 3.3V
15 AGC_CTL
16 V_SUB
17 REG 5V
18 R_BIAS
19 DCLK
20 FCK125
21 L.CLIP
22 OB_CTL
23 DATA
24 DCP
TO A/D CN501 (Page 4-57)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.22 CCD CIRCUIT BOARD

FOIL SIDE (B)


C
B
A
1
2
IC104
R105
CN4
TP1
CN3
C311
IC103
R107
C103
C102
C101
C105
C106
R101
R102
R103
Q303
C307
R312
R311
D304
D301
D302
TP302
R313
R314
C305
C314
C309
C317
C204
L202
R223
C202
R215
R214
C207
C206
R213
R228
IC201
R220
R222
R219
R221
R226
R206
R205
R201
R203
R308
R307
R309
R310
Q302
Q303
D305
TP201
TP301
TP401
TP404
L402
C406
CN2
R411
R408
R409
R410
Q402
R402
R403
TP402
R405
R406
C412
C413
C409
C401
R401
L401
C410
C402
R404
C411
CCD PWB YB20711

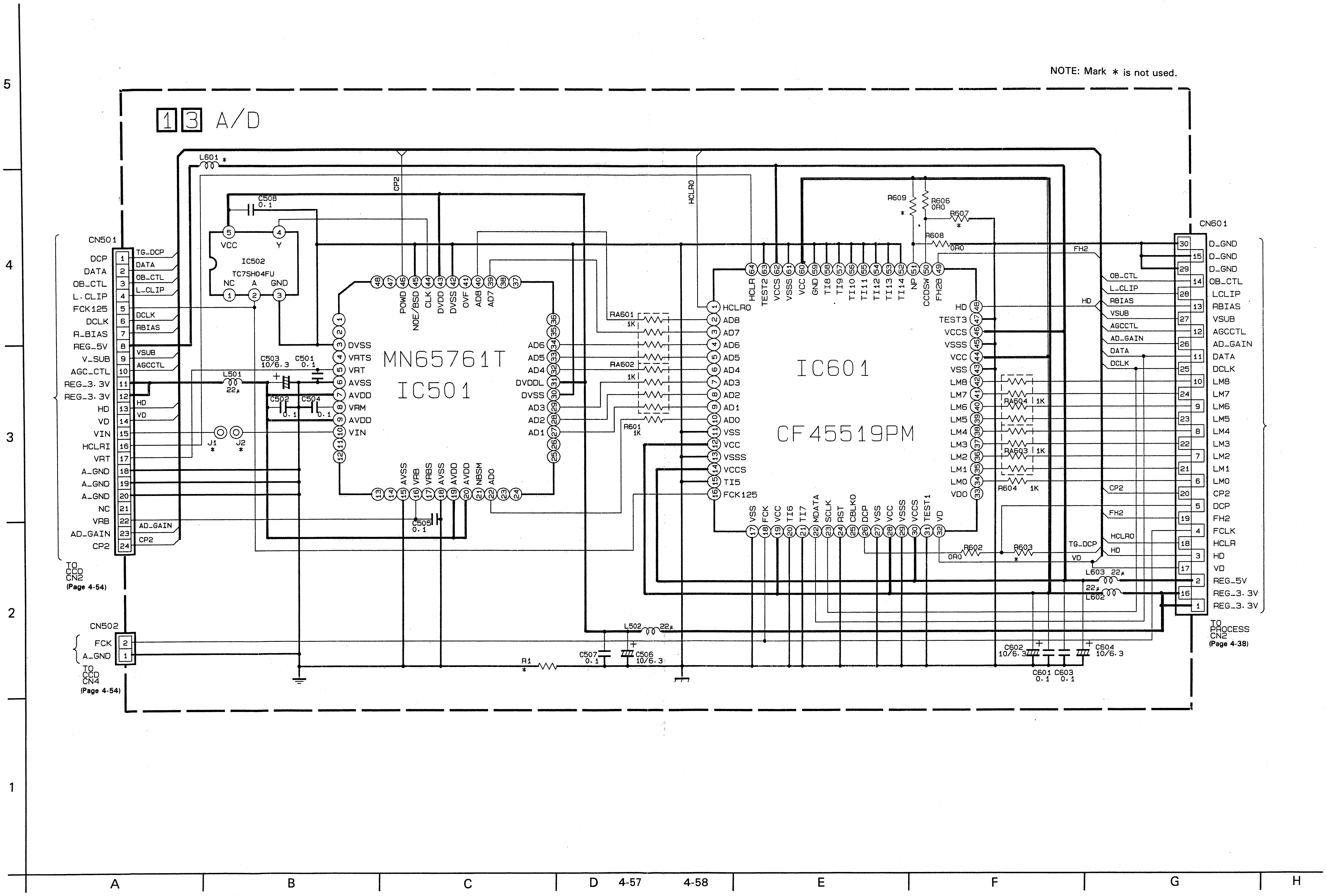
COMPONENT SIDE (A)


C
B
A
2
1
R106
C105
C106
X101
C2
C1
L102
L301
L1
L2
C312
C104
L101
IC301
R315
C205
CN1
C203
L201
C318
L203
C316
C315
R1
Q301
L403
C304
R407
C302
R302
C420
Q401
R211
R212
R217
R218
R304
R306
C313
R305
R303
C201
C421
C422
C407
IC401
Q403
C310
C417
C418
C415
C414
C416
TP403
C408
C405
C404
C403
CCD PWB YB20711

PARTS LOCATION GUIDE <CCD BOARD>

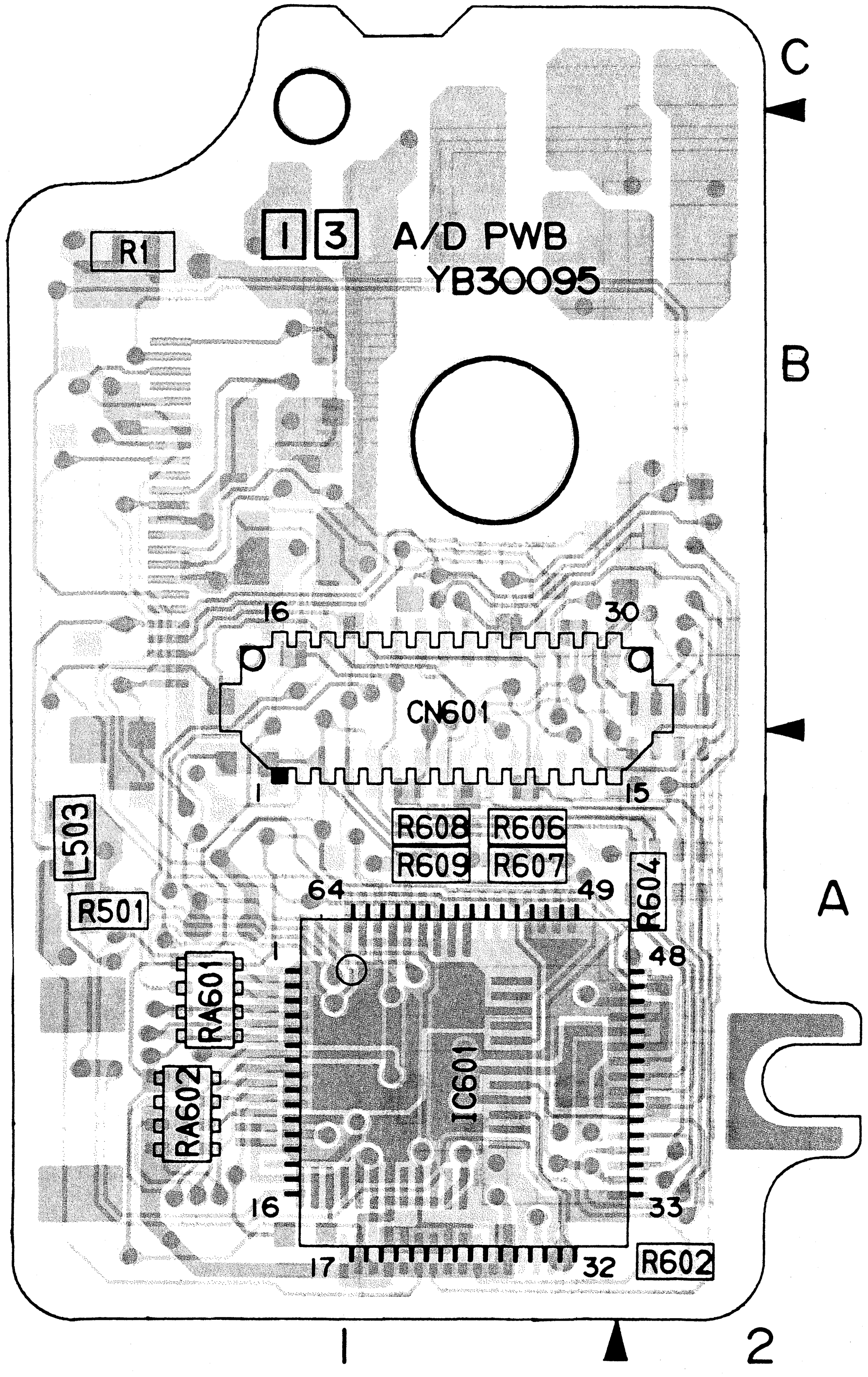
REF. NO.	LOCATION
I C	
IC101	B-1B
IC102	B-1B
IC103	B-1B
IC104	B-1C
IC105	B-1B
IC106	B-1B
IC201	B-1A
IC301	A-2B
IC401	A-1A
REF. NO.	LOCATION
TRANSISTOR	
Q301	A-2A
Q302	B-2B
Q303	B-2B
Q401	A-1A
Q402	B-1A
Q403	A-1A
REF. NO.	LOCATION
DIODE	
D301	B-2B
D302	B-2B
D303	B-2A
D304	B-2B
D305	B-2B
REF. NO.	LOCATION
RESISTOR	
R1	A-2A
R101	B-1B
R102	B-2B
R103	B-2B
R105	B-1C
R106	A-1C
R107	B-1B
R201	B-1B
R203	B-1A
R205	B-1A
R206	B-1A
R211	A-1A
R212	A-1A
R213	B-1B
R214	B-1B
R215	B-1B
R217	A-1A
R218	A-1A
R219	B-1B
R220	B-1B
R221	B-1B
R222	B-1A
R226	B-1A
R228	B-1B
R302	A-1A
R303	A-2A
R304	A-2A
R305	A-2A
R306	A-2A
R307	B-2B
R308	B-2B
R309	B-2B
R310	B-2B
R311	B-2B
R312	B-2B
R313	B-2B
R314	B-2B
R315	A-2B
R401	B-1A
R402	B-1A
R403	B-1A
R404	B-1A
R405	B-1A
R406	B-1A
R407	A-1A
R408	B-1A
R409	B-1A
R410	B-1A
R411	B-1A
REF. NO.	LOCATION
CAPACITOR	
C1	A-2C
C2	A-2C
C101	A-1C
C102	B-2B
C103	B-1B
C104	A-1B
C105	A-1C
C106	A-1C
C201	A-1A
C202	B-1B
C203	A-1B
C204	B-2B
C205	A-2B
C206	B-1B
C207	B-1B
C302	A-1A
C304	A-2A
C305	B-2B
C307	B-2B
C309	B-2B
C310	A-2A
C311	B-2B
C312	A-2B
C313	A-2A
C314	B-2B
C315	A-2B
C316	A-2B
C317	B-2B
C318	A-2B
C401	B-1A
C402	B-1A
C403	A-1A
C404	A-2A
C405	A-2A
C406	B-2A
C407	A-1A
C408	A-2A
C409	B-1A
C410	B-1A
C411	B-1A
C412	B-1A
C413	B-1A
C414	A-1A
C415	A-1A
C416	A-1A
C417	A-1A
C418	A-1A
C420	A-1A
C421	A-1A
C422	A-2A
REF. NO.	LOCATION
COIL	
L1	A-2B
L2	A-2B
L101	A-1B
L102	A-1C
L201	A-1B
L202	B-2B
L203	A-1B
L301	A-2C
L401	B-1A
L402	B-2A
L403	A-2A
REF. NO.	LOCATION
CONNECTOR	
CN1	A-1B
CN2	B-2A
CN3	B-2C
CN4	B-1C
REF. NO.	LOCATION
TEST PIN	
TP1	B-2C
TP201	B-2A
TP301	B-2A
TP302	B-2B
TP401	B-2A
TP402	B-1A
TP403	A-2A
TP404	B-2A
REF. NO.	LOCATION
ADJUSTMENT	
R223	B-1B

4.23 A/D SCHEMATIC DIAGRAM

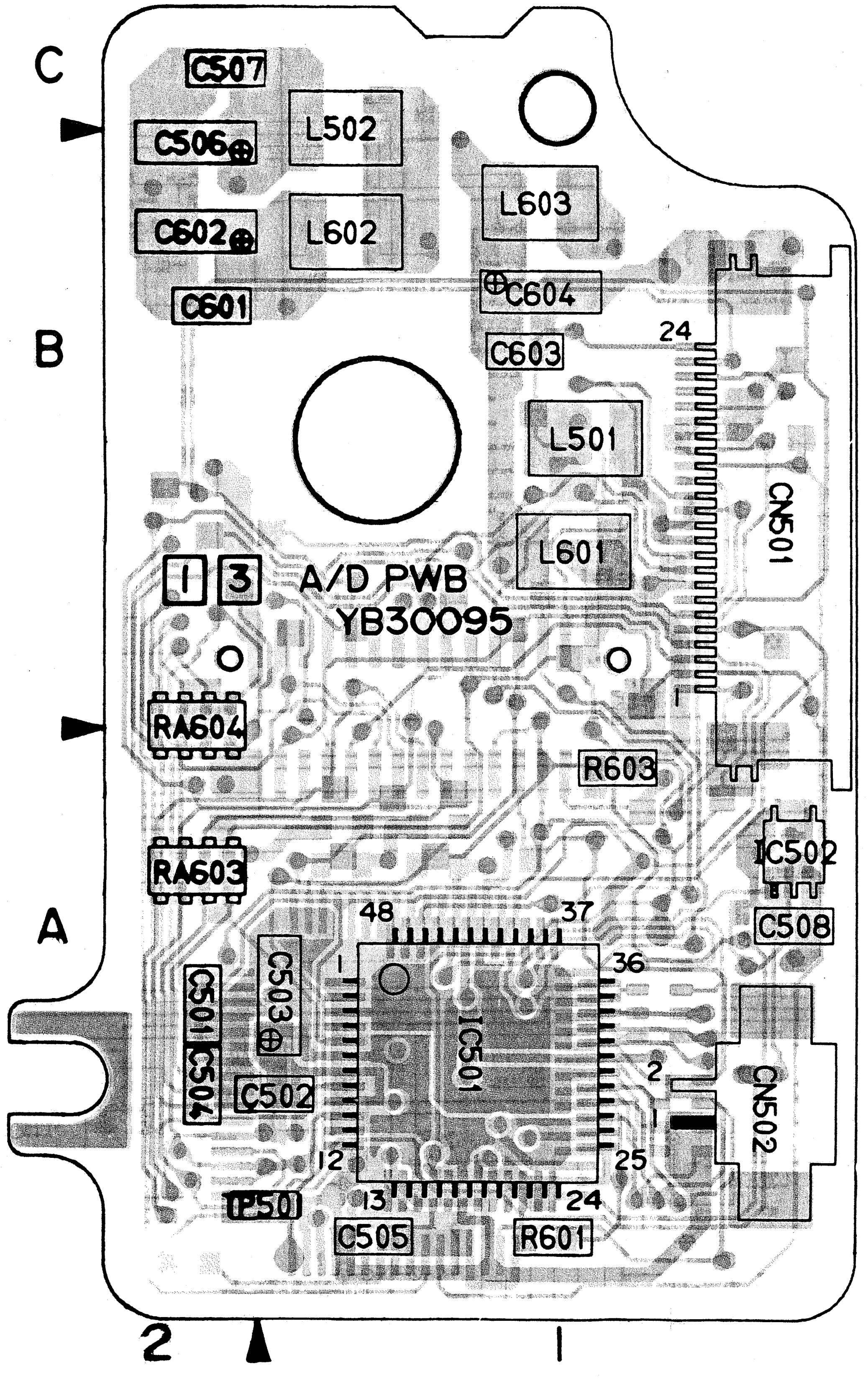

NOTE: Mark * is not used.
13 A/D
CN501
DCP
DATA
OB_CTL
L.CLIP
FCK125
DCLK
R_BIAS
REG_5V
V_SUB
AGC_CTL
REG_3.3V
REG_3.3V
HD
VD
VIN
HCLRI
VRT
A_GND
A_GND
A_GND
NC
VRB
AD_GAIN
CP2
TG_DCP
DATA
OB_CTL
L_CLIP
DCLK
RBIAS
VSUB
AGCCTL
HD
VD
AD_GAIN
CP2
TO CCD CN2 (Page 4-54)
CN502
FCK
A_GND
TO CCD CN4 (Page 4-54)
L601 *
C508 0.1
IC502 TC7SH04FU
VCC
Y
NC
A
GND
C503 10/6.3
C501 0.1
L501 22μ
C502 0.1
C504 0.1
J1 *
J2 *
MN65761T IC501
DVSS
VRTS
VRT
AVSS
AVDD
VRM
AVDD
VIN
POWD
NOE/BSD
CLK
DVDD
DVSS
OVF
AD8
AD7
AD6
AD5
AD4
DVDDL
DVSS
AD3
AD2
AD1
AVSS
VRB
VRBS
AVSS
AVDD
AVDD
NBSM
AD0
C505 0.1
CP2
HCLR0
RA601 1K
RA602 1K
R601 1K
L502 22μ
C507 0.1
C506 10/6.3
R1 *
IC601 CF45519PM
HCLR0
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
VSS
VCC
VSSS
VCCS
TI5
FCK125
HCLR
TEST2
VCCS
VSSS
VCC
GND
TI8
TI9
TI10
TI11
TI12
TI13
TI14
NP
CCDSW
FH2B
HD
TEST3
VCCS
VSSS
VCC
VSS
LM8
LM7
LM6
LM5
LM4
LM3
LM2
LM1
LM0
VD0
VSS
FCK
VCC
TI6
TI7
MDATA
SCLK
RST
CBLKO
DCP
VSS
VCC
VSSS
VCCS
TEST1
VD
R609 *
R606 0R0
R607 *
R608 0R0
RA604 1K
RA603 1K
R604 1K
R602 0R0
R603 *
FH2
HD
OB_CTL
L_CLIP
RBIAS
VSUB
AGCCTL
AD_GAIN
DATA
DCLK
CP2
FH2
HCLR0
HD
TG_DCP
VD
L603 22μ
L602 22μ
C602 10/6.3
C604 10/6.3
C601 0.1
C603 0.1
CN601
D_GND
D_GND
D_GND
OB_CTL
LCLIP
RBIAS
VSUB
AGCCTL
AD_GAIN
DATA
DCLK
LM8
LM7
LM6
LM5
LM4
LM3
LM2
LM1
LM0
CP2
DCP
FH2
FCLK
HCLR
HD
VD
REG_5V
REG_3.3V
REG_3.3V
TO PROCESS CN2 (Page 4-38)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.24 A/D CIRCUIT BOARD

FOIL SIDE (B)


C
B
A
1
2
R1
1 3 A/D PWB
YB30095
16
30
CN601
1
15
R608
R606
R609
R607
R604
L503
R501
64
49
48
1
RA601
RA602
IC601
16
33
17
32
R602

COMPONENT SIDE (A)

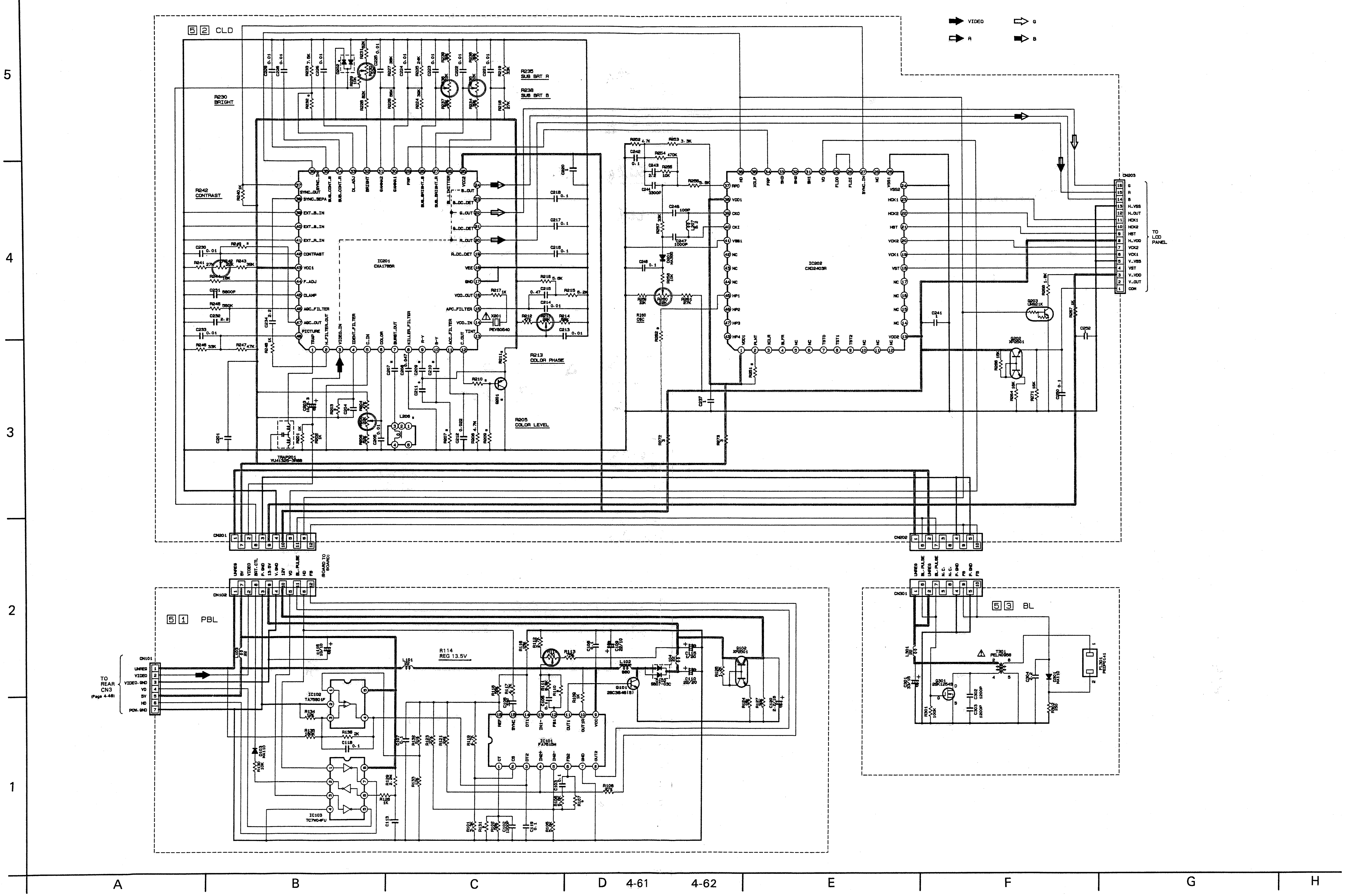

C
B
A
2
1
C507
C506
L502
C602
L602
L603
C604
C601
C603
24
L501
CN501
L601
1 3 A/D PWB
YB30095
RA604
R603
RA603
IC502
C508
48
37
36
1
C503
C501
C504
C502
IC501
2
1
CN502
12
25
13
24
TP501
C505
R601

PARTS LOCATION GUIDE <A/D BOARD>

REF. NO.	LOCATION
I C	
IC501	A-1A
IC502	A-1A
IC601	B-1A
REF. NO.	LOCATION
RESISTOR	
R1	B-1B
R501	B-1A
R601	A-1A
R602	B-2A
R603	A-1A
R604	B-2A
R606	B-1A
R607	B-1A
R608	B-1A
R609	B-1A
REF. NO.	LOCATION
NETWORK RESISTOR	
RA601	B-1A
RA602	B-1A
RA603	A-2A
RA604	A-2B
REF. NO.	LOCATION
CAPACITOR	
C501	A-2A
C502	A-1A
C503	A-1A
C504	A-2A
C505	A-1A
C506	A-2C
C507	A-2C
C508	A-1A
C601	A-2B
C602	A-2B
C603	A-1B
C604	A-1B
REF. NO.	LOCATION
COIL	
L501	A-1B
L502	A-1C
L503	B-1A
L601	A-1B
L602	A-1B
L603	A-1B
REF. NO.	LOCATION
CONNECTOR	
CN501	A-1B
CN502	A-1A
CN601	B-1B
REF. NO.	LOCATION
TEST PIN	
TP501	A-1A

4.25 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAMS

NOTES: 1. Mark ∗ is not used.
2. SIGNAL PATH

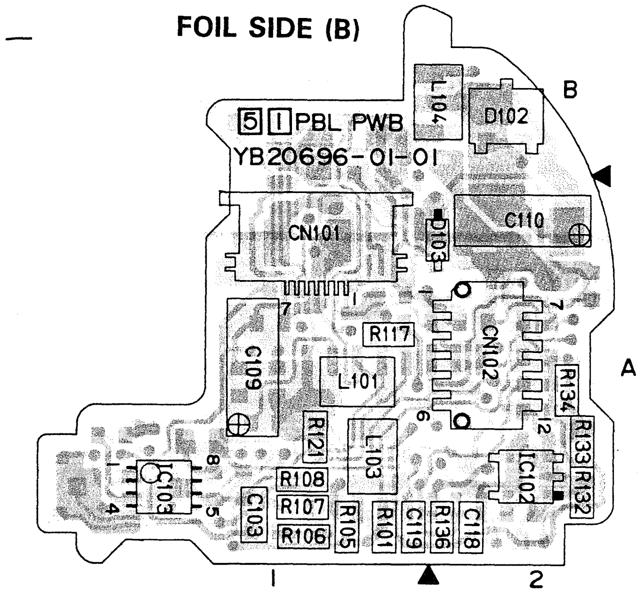


VIDEO
R
G
B
5 2 CLD
5 1 PBL
5 3 BL
IC201 CXA1785R
IC202 CXD2403R
IC101 FA7615M
IC102 TA75S01F
IC103 TC7W04FU
R230 BRIGHT
R242 CONTRAST
R235 SUB BRT R
R236 SUB BRT B
R213 COLOR PHASE
R205 COLOR LEVEL
X201 PEYB0540
TRAP201 YU41326-3488
L205
Q201
R114 REG 13.5V
L101
L102
Q101 2SC3646(S)
Q102 XP2501
Q301 2SK1254S
T301 PELN0858
CN201
CN202
CN203
CN102
CN301
CN101
TO LCD PANEL
TO REAR CN3 (Page 4-46)
UNREG
VIDEO
VIDEO GND
VD
5V
HD
POW. GND
(BOARD TO BOARD)
1
2
3
4
5
A
B
C
D
E
F
G
H

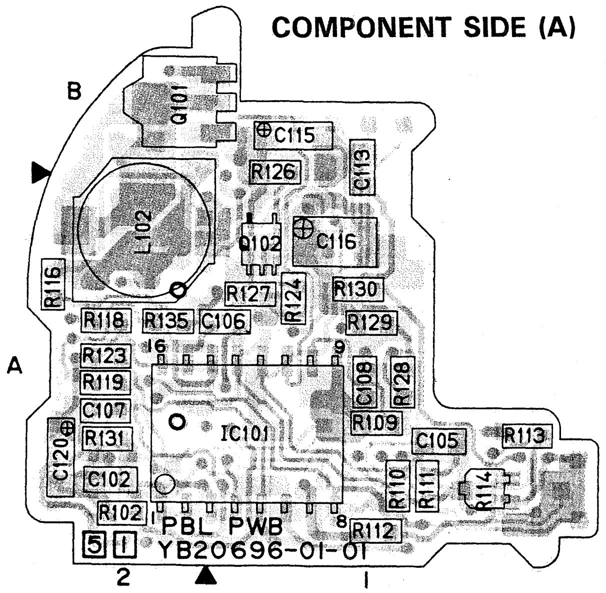
4.26 ELECTRONIC VIEWFINDER CIRCUIT BOARDS

—PBL—

FOIL SIDE (B)

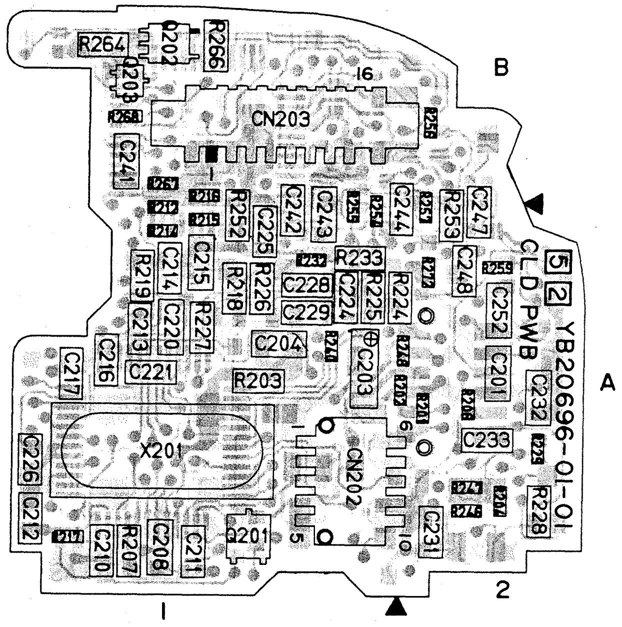

5 1 PBL PWB
YB20696-01-01
L104
D102
CN101
D103
C110
R117
CN102
C109
L101
R134
R121
L103
IC103
IC102
R133
R132
R108
R107
R106
C103
R105
R101
C119
R136
C118
B
A
1
2
7
6
12
8
4
5

COMPONENT SIDE (A)

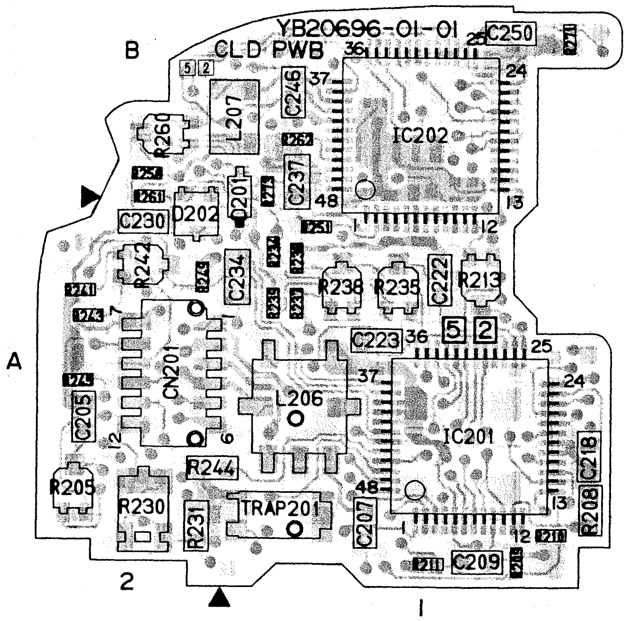

Q101
C115
R126
C113
L102
Q102
C116
R116
R127
R124
R130
R118
R135
C106
R129
R123
R119
C107
IC101
C108
R128
R109
C120
R131
C105
R113
C102
R110
R111
R114
R102
PBL PWB
R112
5 1
YB20696-01-01
B
A
2
1
16
9
8

—CLD—

FOIL SIDE (B)

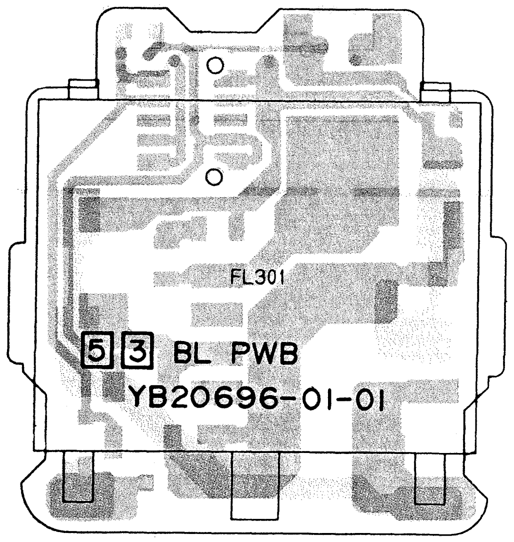

R264
Q202
Q203
R266
CN203
C241
R252
C225
C242
C243
C244
R259
C247
C248
R233
R219
C214
C215
R218
R226
C228
C229
C224
R225
R224
C252
C213
C220
R227
C204
C203
C201
C217
C216
C221
R203
C232
X201
CN202
C233
C226
C212
C210
R207
C208
C211
Q201
C231
R228
CLD PWB
5 2
YB20696-01-01
B
A
1
2
16

COMPONENT SIDE (A)

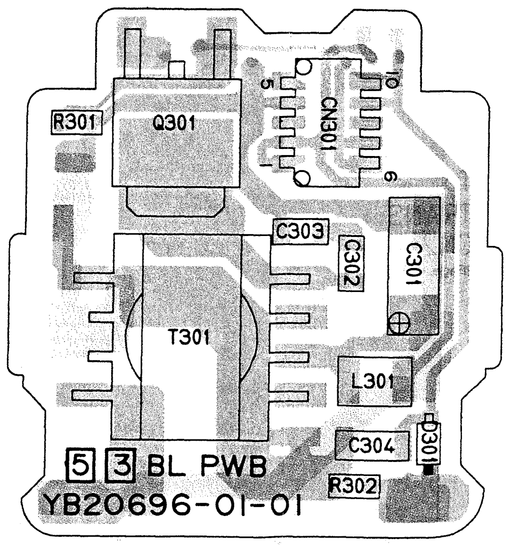

YB20696-01-01
CLD PWB
5 2
C250
R260
L207
C246
IC202
C237
D201
C230
D202
R242
C234
R236
R235
C222
R213
C223
CN201
L206
IC201
C205
R244
C218
R205
R230
R231
TRAP201
C207
R208
C209
B
A
2
1
36
37
24
48
13
12
25

—BL—

FOIL SIDE (B)


FL301
5 3 BL PWB
YB20696-01-01

COMPONENT SIDE (A)


R301
Q301
CN301
C303
C302
C301
T301
L301
C304
D301
R302
5 3 BL PWB
YB20696-01-01
5
10
6

PARTS LOCATION GUIDE <PBL BOARD>

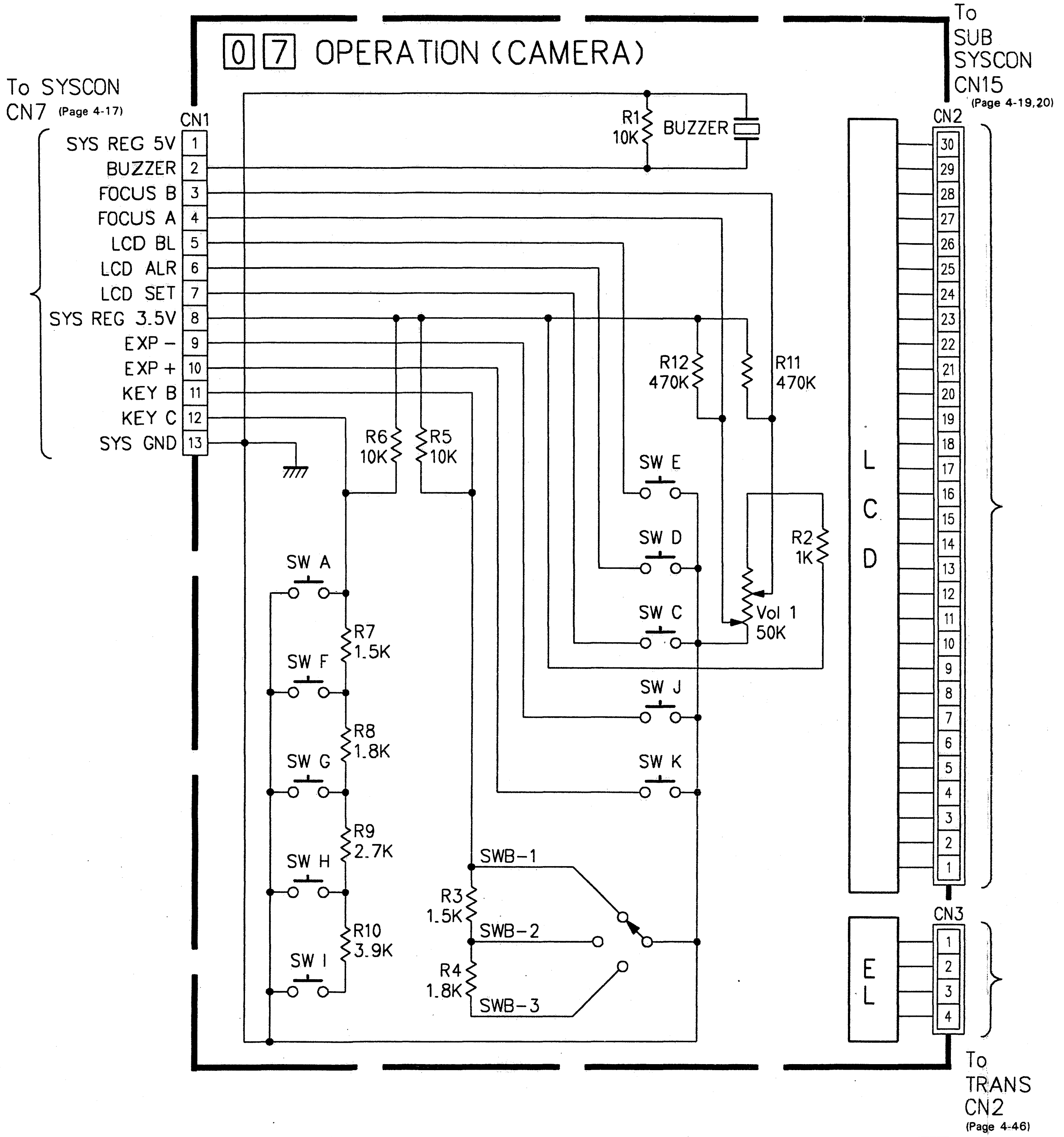
REF. NO.	LOCATION
I C	
IC101	A-1A
IC102	B-2A
IC103	B-1A
REF. NO.	**LOCATION**
TRANSISTOR	
Q101	A-2B
Q102	A-1A
REF. NO.	**LOCATION**
DIODE	
D102	B-2B
D103	B-2A
REF. NO.	**LOCATION**
RESISTOR	
R101	B-1A
R102	A-2A
R105	B-1A
R106	B-1A
R107	B-1A
R108	B-1A
R109	A-1A
R110	A-1A
R111	A-1A
R112	A-1A
R113	A-1A
R116	A-2A
R117	B-1A
R118	A-2A
R119	A-2A
R121	B-1A
R123	A-2A
R124	A-1A
R126	A-1B
R127	A-1A
R128	A-1A
R129	A-1A
R130	A-1A
R131	A-2A
R132	B-2A
R133	B-2A
R134	B-2A
R135	A-2A
R136	B-2A
REF. NO.	**LOCATION**
CAPACITOR	
C102	A-2A
C103	B-1A
C105	A-1A
C106	A-1A
C107	A-2A
C108	A-1A
C109	B-1A
C110	B-2A
C113	A-1B
C115	A-1B
C116	A-1A
C118	B-2A
C119	B-1A
C120	A-2A
REF. NO.	**LOCATION**
COIL	
L101	B-1A
L102	A-2A
L103	B-1A
L104	B-2B
REF. NO.	**LOCATION**
CONNECTOR	
CN101	B-1A
CN102	B-2A
REF. NO.	**LOCATION**
ADJUSTMENT	
R114	A-1A

PARTS LOCATION GUIDE <CLD BOARD >

REF. NO.	LOCATION
I C	
IC201	A-1A
IC202	A-1B
REF. NO.	**LOCATION**
TRANSISTOR	
Q201	B-1A
Q202	B-1B
Q203	B-1B
REF. NO.	**LOCATION**
DIODE	
D201	A-1B
D202	A-2A
REF. NO.	**LOCATION**
RESISTOR	
R201	B-2A
R202	B-1A
R203	B-1A
R204	B-2A
R206	B-2A
R207	B-1A
R208	A-1A
R209	A-1A
R210	A-1A
R211	A-1A
R212	B-1A
R214	B-1A
R215	B-1A
R216	B-1B
R217	B-1A
R218	B-1A
R219	B-1A
R224	B-1A
R225	B-1A
R226	B-1A
R227	B-1A
R228	B-2A
R229	B-2A
R231	A-2A
R232	B-1A
R233	B-1A
R234	A-1A
R236	A-1A
R237	A-1A
R239	A-1A
R240	B-1A
R241	A-2A
R243	A-2A
R244	A-2A
R245	A-2A
R246	B-2A
R247	B-2A
R248	B-1A
R249	A-2A
R251	A-1A
R252	B-1A
R253	B-2A
R254	B-1A
R255	B-1A
R256	B-2B
R257	B-2A
R258	A-2B
R259	B-2A
R261	A-2B
R262	A-1B
R264	B-1B
R266	B-1B
R267	B-1B
R268	B-1B
R271	A-2B
R272	B-2A
R273	A-2B
REF. NO.	**LOCATION**
CAPACITOR	
C201	B-2A
C203	B-1A
C204	B-1A
C205	A-2A
C207	A-1A
C208	B-1A
C209	A-1A
C210	B-1A
C212	B-1A
C213	B-1A
C214	B-1A
C215	B-1A
C216	B-1A
C217	B-1A
C218	A-1A
C220	B-1A
C221	B-1A
C222	A-1A
C223	A-1A
C224	B-1A
C225	B-1A
C226	B-1A
C228	B-1A
C229	B-1A
C230	A-2A
C231	B-2A
C232	B-2A
C233	B-2A
C234	A-1A
C237	A-1A
C241	B-1B
C242	B-1A
C243	B-1A
C244	B-2A
C246	A-1B
C247	B-2A
C248	B-2A
C250	A-1B
C252	B-2A
REF. NO.	**LOCATION**
COIL	
L206	A-1A
L207	A-1B
REF. NO.	**LOCATION**
TRAP	
TRAP201	A-1A
REF. NO.	**LOCATION**
RESONATOR	
X201	B-1A
REF. NO.	**LOCATION**
CONNECTOR	
CN201	A-2A
CN202	B-1A
CN203	B-1B
REF. NO.	**LOCATION**
ADJUSTMENT	
R205	A-2A
R213	A-1A
R230	A-2A
R235	A-1A
R238	A-1A
R242	A-2A
R260	A-2B

4.27 OPERATION (CAMERA) SCHEMATIC DIAGRAM

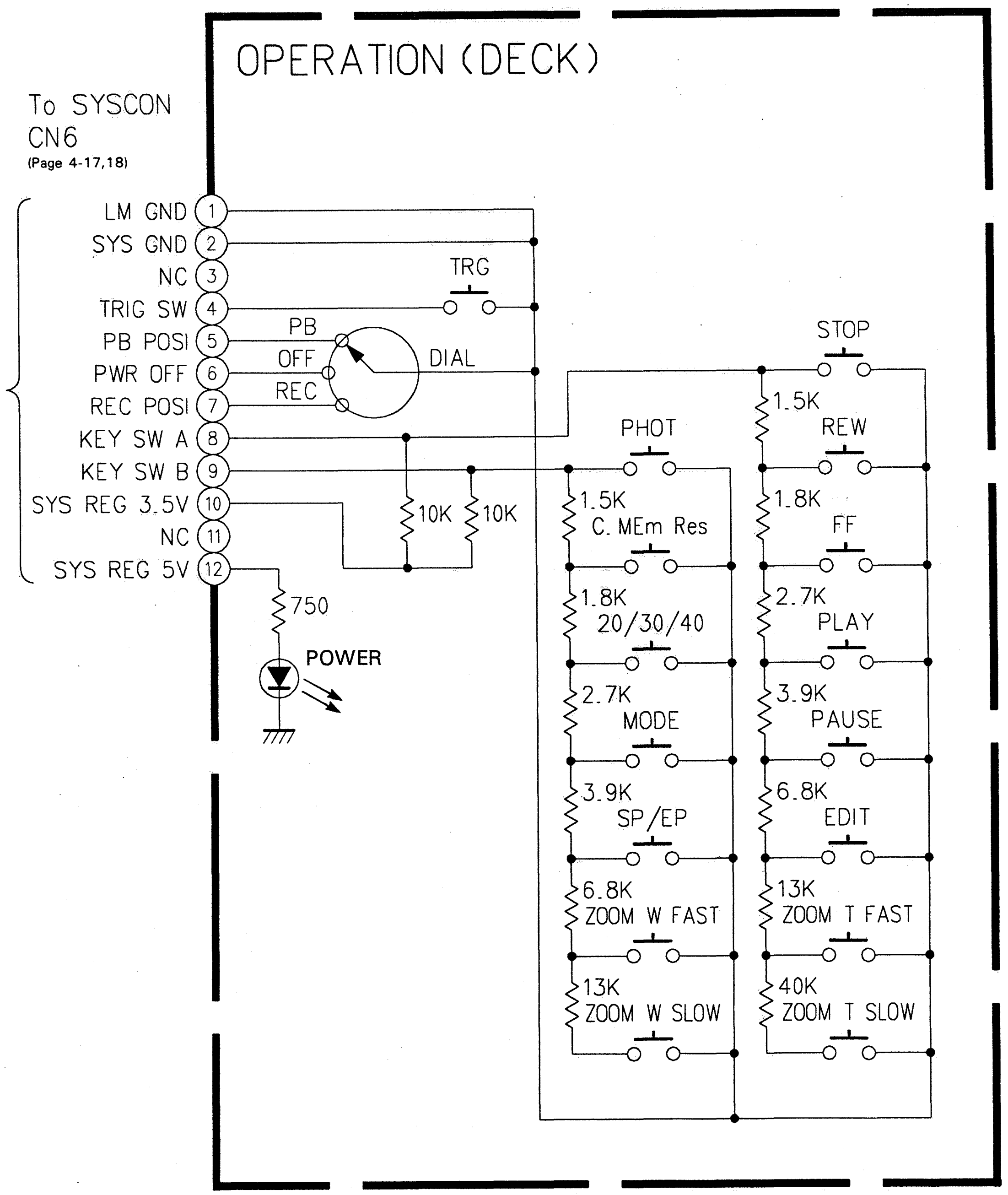
NOTE: *The schematic diagram is only for reference.*
Avoid replacing individual parts.
Replace the entire unit only.


07 OPERATION (CAMERA)
To SYSCON CN7 (Page 4-17)
CN1
SYS REG 5V 1
BUZZER 2
FOCUS B 3
FOCUS A 4
LCD BL 5
LCD ALR 6
LCD SET 7
SYS REG 3.5V 8
EXP − 9
EXP + 10
KEY B 11
KEY C 12
SYS GND 13
To SUB SYSCON CN15 (Page 4-19,20)
CN2
1–30
R1 10K
BUZZER
R12 470K
R11 470K
R6 10K
R5 10K
SW E
SW D
SW C
SW J
SW K
R2 1K
Vol 1 50K
SW A
R7 1.5K
SW F
R8 1.8K
SW G
R9 2.7K
SW H
R10 3.9K
SW I
SWB-1
R3 1.5K
SWB-2
R4 1.8K
SWB-3
LCD
CN3
1 2 3 4
EL
To TRANS CN2 (Page 4-46)

NO.	FUNCTION NAME	NO.	FUNCTION NAME	NO.	FUNCTION NAME
SWA	FOCUS +/-	SWD	ALARM	SWI	MENU
SWB-1	FULL AUTO	SWE	DISPLAY	SWJ	EXP. -
SWB-2	RESET	SWF	D. I. STABILIZER	SWK	EXP. +
SWB-3	VARIABLE PRESET	SWG	P. AE/EFFECT		
SWC	SET	SWH	FADE/WIPE		

4.28 OPERATION (DECK) SCHEMATIC DIAGRAM

NOTE: *This schematic diagram is only for reference.*
Avoid replacing individual parts.
Replace the entire unit only.


OPERATION (DECK)
To SYSCON CN6 (Page 4-17,18)
LM GND 1
SYS GND 2
NC 3
TRIG SW 4
PB POSI 5
PWR OFF 6
REC POSI 7
KEY SW A 8
KEY SW B 9
SYS REG 3.5V 10
NC 11
SYS REG 5V 12
TRG
PB
OFF
REC
DIAL
750
POWER
10K
10K
PHOT
1.5K C. MEm Res
1.8K 20/30/40
2.7K MODE
3.9K SP/EP
6.8K ZOOM W FAST
13K ZOOM W SLOW
STOP
1.5K REW
1.8K FF
2.7K PLAY
3.9K PAUSE
6.8K EDIT
13K ZOOM T FAST
40K ZOOM T SLOW

4.29 VOLTAGE CHARTS

<MAIN>

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
IC1				
1	0	0	0	0
2	0	3.4	0	3.3
3	3.6	3.6	3.6	3.5
4	3.6	0	3.7	0
5	0	0	0	0
6	0	0	0	0
7	0	0	3.6	3.6
8	3.6	0	3.6	0
9	0	3.6	0	3.6
10	0	3.7	0	3.6
11	0	0	0	0
12	3.7	0	3.7	0
13	3.7	3.7	3.7	3.6
14	0	0	0	0
15	3.7	3.7	3.7	3.6
16	2.9	2.9	2.9	2.8
17	0	0	0	0
18	3.7	0	3.7	0
19	0	0	0	0
20	0	0	2.5	2.5
21	0	0	0	0
22	3.6	3.6	3.6	3.6
23	3.5	3.6	3.6	3.6
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	3.6	0	3.6	0
28	3.6	3.6	3.6	0
29	0	3.6	0	3.6
30	2.8	2.8	2.8	2.7
31	-	-	-	-
32	0	0	0	0
33	0	0	0	0
34	1.9	1.9	1.9	2.0
35	1.4	1.4	1.4	1.4
36	3.7	3.7	3.7	3.6
37	0	0	0	0
38	0	0	0	0
39	3.7	3.7	3.7	3.6
40	0	0	0	0
41	-	-	-	-
42	-	-	-	-
43	3.5	3.5	3.5	3.5
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	3.6	3.6	3.6	3.6
48	0	0	0	0
49	3.7	0	3.6	0
50	3.6	3.5	3.6	3.6
51	1.9	1.9	1.9	1.9
52	1.9	1.9	1.9	1.9
53	1.9	1.9	1.9	1.9
54	0	0	0	0
55	1.9	1.2	1.9	0.6
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0
60	0	3.6	3.6	3.6
61	0	0	0	0
62	0	0	0	3.2
63	3.6	3.6	3.6	0
64	1.8	1.8	1.8	1.8
65	1.8	1.7	1.8	1.9
66	2.2	2.2	2.2	2.2
67	0.4	0.4	0.4	0.4
68	3.6	3.6	3.6	3.6
69	0	1.6	0	1.3
70	2.4	2.4	2.4	2.4
71	0	1.8	0	1.2
72	0	0	0	0
73	3.6	3.6	3.6	3.6
74	0.6	0.6	0.6	3.3
75	3.6	3.6	3.6	3.3
76	3.6	3.6	3.6	3.6
77	0	0	0	0
78	0	0	0	0
79	3.6	3.6	3.6	3.6
80	0	0	0	0
81	-	-	-	-
82	0	0	0	3.6
83	3.5	3.5	3.5	3.5
84	3.5	3.5	3.5	3.5
85	0	0	0	0
86	3.6	3.6	3.6	3.6
87	0	0	0	0
88	-	-	-	-
89	3.6	3.6	3.6	3.5
90	3.7	3.7	3.7	3.6
91	-	-	-	-
92	0	0	0	0
93	0	0	0	0
94	0	0	0	0
95	0	0	0	0
96	0	0	0	0
97	1.9	1.9	1.9	1.8
98	0.5	0.5	0.5	0.5
99	1.9	1.9	1.9	1.9
100	0.6	0.6	0.6	0.6
IC4				
1	0	0	0	0
2	3.6	3.7	3.7	3.7
3	3.6	3.6	3.6	3.5
4	0	0	0	0
5	-	-	-	-
6	-	-	-	-
7	0	0	0	0
8	3.6	3.7	3.7	3.7
9	0	0	0	3.6
10	3.6	0	0	0
11	0	0	0	0
12	0	0	0	0
13	3.6	3.5	3.5	3.5
14	3.5	3.5	3.5	3.5
IC5				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	-	-	-	-
5	3.5	3.5	3.5	3.5
6	3.6	3.6	3.6	3.6
7	6.8	6.8	6.8	6.8
8	3.5	3.5	3.5	3.5
IC6				
1	0	0	0	0
2	1.4	1.4	1.4	1.4
3	0	0	0	0
4	0	0	0	0
5	3.5	3.5	3.5	3.5
IC7				
1	0	0	0	0
2	6.8	6.8	6.8	6.8
3	5.0	5.0	5.0	5.0
4	0	0	0	0
5	0	0	0	0
6	5.0	5.0	5.0	5.0
7	0	0	0	0
8	0	0	0	0
IC8				
1	3.6	3.6	3.6	3.6
2	0.5	0.5	0.5	0.5
3	0	0	0	0
4	0	0	0	0
5	3.5	3.5	3.5	3.5
IC10				
1	3.6	3.6	3.6	3.6
2	3.6	3.6	3.6	3.6
3	3.6	3.6	3.6	3.6
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	3.7	3.8	3.8	3.8
8	5.0	5.0	5.0	5.0
IC11				
1	0.9	0.8	0.8	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	3.5	3.5	3.5	3.5
9	3.5	3.5	3.5	3.5
10	0	3.7	0	3.6
11	0	0	0	0
12	0	0	0	0
13	3.2	3.2	3.2	0
14	0	0	0	0
15	3.7	3.7	3.6	3.6
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	3.7	0	3.6
20	0	0	0	0
21	3.6	3.6	3.6	3.6
22	0	0	0	0
23	0	1.9	1.9	1.9
24	1.9	1.9	1.9	1.8
25	1.9	0	0	1.9
26	1.9	0	0	1.9
27	3.7	0	3.7	3.6
28	3.7	3.7	3.7	3.6
29	2.5	2.5	2.5	2.4
30	1.3	1.9	1.3	1.3
31	0	0	0	0
32	1.9	1.9	1.9	1.9
33	0	1.9	1.9	0
34	1.9	1.9	1.9	1.9
35	0	1.9	1.9	1.9
36	1.9	1.9	1.9	0
37	0	1.9	1.9	1.9
38	1.9	1.9	1.9	1.9
39	0	1.9	1.9	1.9
40	1.9	1.9	1.9	1.9
41	1.9	1.9	1.9	1.9
42	1.9	1.9	1.9	0
43	1.9	1.9	1.9	1.9
44	1.9	1.9	1.9	1.9
45	0	1.9	1.9	1.9
46	1.9	1.9	1.9	1.9
47	1.9	1.9	1.9	1.9
48	1.9	1.9	1.9	1.9
49	1.9	1.9	1.9	1.9
50	1.9	1.9	1.9	1.9
51	1.9	1.9	1.9	1.9
52	1.9	1.9	1.9	1.9
53	1.9	1.9	1.9	1.9
54	1.9	1.9	1.9	1.9
55	1.9	1.9	1.9	1.9
56	1.9	0	0	0
57	1.9	0	0	0
58	0	0	0	0
59	0	0	0	0
60	0	0	0	0
61	0	0	0	0
62	0	0	0	0
63	0	0	0	0
64	0	0	0	0
65	0	0	0	0
66	0	0	0	0
67	0	0	0	0
68	0	0	0	0
69	2.1	0.6	2.1	2.1
70	2.8	2.2	2.8	2.7
71	0	0	0	0
72	0.9	0	0	0
73	0	0	0	0
74	3.6	3.0	0	3.5
75	3.6	3.7	3.7	3.6
76	2.2	2.7	2.1	2.1
77	3.6	0	0	3.6
78	0	0	0	0
79	2.5	2.5	2.5	2.5
80	1.8	1.8	3.7	1.8
81	3.7	3.7	3.7	3.6
82	1.7	1.7	1.7	1.7
83	2.0	2.0	2.1	2.1
84	3.5	3.5	3.6	3.5
85	3.5	3.5	3.5	3.5
86	-	-	-	-
87	0	0	0	0
88	0	0	0	0
89	0	0	0	0
90	0	0	0	0
91	3.5	3.5	3.5	3.5
92	3.5	3.5	3.5	3.5
93	3.5	3.5	3.5	3.5

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
94	3.6	3.7	3.7	3.6
95	3.6	3.7	3.7	3.6
96	3.6	3.6	3.7	3.6
97	3.6	3.7	3.6	3.6
98	3.6	0	0	3.6
99	0	0	0	0
100	3.3	0	3.3	0
IC12				
1	3.5	3.6	3.5	3.5
2	2.0	2.4	2.0	2.1
3	2.1	2.4	2.1	2.1
4	3.5	3.6	3.5	3.6
5	3.5	3.5	3.5	3.5
6	0.9	0	0	0
7	0	0	1.4	1.4
8	0	0	1.4	1.5
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	3.1	3.2
20	0	0	2.8	2.9
IC13				
1	2.1	2.5	0	2.3
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	3.5	3.5	3.5	3.5
IC251				
1	0	0	0	0
2	3.1	3.2	3.1	3.1
3	2.4	2.5	2.5	2.4
4	2.6	2.5	2.5	2.4
5	2.8	2.5	2.9	2.5
6	2.5	2.4	2.5	2.5
7	2.6	2.6	2.6	2.6
8	5.0	5.0	5.0	5.0
9	2.1	2.1	2.1	2.1
10	2.6	2.6	2.6	2.6
11	2.5	2.6	2.6	2.6
12	4.3	4.4	4.4	4.4
13	0	0.5	0	0
14	0	0	0	0
IC252				
1	1.8	1.8	1.9	1.8
2	1.4	1.4	1.4	1.4
3	1.1	1.0	1.1	1.0
4	0	0	0	0
5	1.4	1.4	1.4	1.4
6	3.2	3.2	3.2	3.2
7	0	0	0	0
8	5.0	5.0	5.0	5.0
IC301				
1	5.0	5.0	5.0	5.0
2	0	0	0	0
3	2.5	2.5	2.5	2.6
4	2.5	2.5	2.5	2.6
5	2.5	2.5	2.5	2.6
6	1.8	1.9	1.9	1.9
7	1.4	1.4	1.4	1.4
8	0.6	0.6	0.6	0.6
9	1.3	1.4	1.4	1.4
10	5.0	5.0	5.0	5.0
11	2.3	2.3	2.3	2.4
12	1.8	1.8	1.8	1.8
13	3.0	3.0	3.0	3.1
14	2.1	2.1	2.1	2.1
15	0	0	0	0
16	2.1	2.1	2.1	2.1
17	5.7	5.7	5.7	5.7
18	2.0	2.1	2.1	2.1
19	2.2	2.3	2.3	2.3
20	2.2	2.2	2.9	2.3
21	0.8	0.8	0.9	0.9
22	0.8	0.8	0.8	0.9
23	3.6	3.7	3.7	3.7
24	3.6	3.7	3.6	3.7

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
25	4.9	4.8	4.9	4.9
26	2.5	2.4	2.5	2.6
27	2.5	2.5	2.5	2.5
28	2.5	2.5	2.5	2.5
29	0	0.4	0.4	0.4
30	1.4	1.4	1.4	1.4
IC351				
1	0	0	0	0
2	1.8	1.9	1.9	1.9
3	3.4	3.5	3.5	3.6
4	1.8	1.9	1.9	1.9
5	0	0	0	0
6	1.4	1.4	1.4	1.4
7	1.1	1.1	1.1	1.1
8	0.7	0.7	0.7	0.7
9	4.0	4.0	4.0	4.0
10	0.7	0.7	0.7	0.7
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	5.0	5.0	5.0	5.0
15	2.5	2.6	2.5	2.6
16	2.5	2.6	2.5	2.6
17	2.5	2.6	2.5	2.5
18	4.2	4.2	4.2	4.3
19	0	0	0	0
20	2.5	2.5	2.6	2.6
21	2.5	2.5	2.6	2.5
22	2.5	2.5	2.6	2.6
23	2.5	2.5	2.6	2.6
24	2.5	2.5	2.5	2.6
25	2.5	2.5	2.5	2.6
26	2.9	3.0	3.0	3.0
27	2.9	3.0	3.0	3.1
28	2.9	3.0	3.0	3.1
29	1.2	1.3	1.3	1.3
30	1.2	1.3	1.3	1.3
31	1.2	1.3	1.3	1.3
32	0	0	0	0
IC401				
1	4.9	5.0	4.9	5.0
2	4.9	4.0	4.8	4.0
3	2.5	2.5	2.5	2.5
4	3.6	3.6	3.6	3.6
5	0	0	0.7	0
6	2.6	2.6	2.6	2.5
7	0	0.7	0.7	0.8
8	1.5	1.5	1.5	1.5
9	0.7	1.5	0.7	0.7
10	0	0	0	0
11	2.5	2.5	2.5	2.5
12	2.6	2.6	2.5	2.5
13	2.6	2.5	2.5	2.5
14	2.6	2.5	2.6	2.5
15	2.5	2.5	2.5	2.5
16	4.9	4.9	4.9	4.8
17	1.9	1.9	1.9	1.9
18	0	1.9	1.9	1.9
19	0	1.9	0	1.3
20	0	0	0	0
21	3.5	3.5	3.5	0
22	1.4	0.6	-	-
23	3.2	3.2	3.2	3.2
24	0	0	0	0
25	0	2.5	0.5	2.5
26	4.9	5.0	4.9	4.9
27	0	1.9	1.9	1.9
28	0	0	0	0
29	0	0	0	0
30	1.9	1.9	1.9	1.9
31	2.0	1.9	1.9	1.9
32	2.1	2.1	2.1	2.0
33	4.9	4.9	4.9	4.8
34	2.5	2.5	2.5	2.5
35	2.6	2.6	2.6	2.6
36	0	0	0	0
37	2.6	2.5	2.5	2.5
38	2.6	2.6	2.6	2.5
39	0	0	0	0
40	0.7	0.7	0.7	0.7
41	1.6	1.6	1.6	1.7
42	0.7	0.7	0.7	0.7
43	0	2.5	2.6	2.5

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
44	4.9	4.9	4.9	4.9
45	2.5	2.5	2.5	2.5
46	3.9	0	3.8	0
47	5.0	4.9	5.0	4.9
48	0	0	0	0
49	2.6	2.5	2.5	2.5
50	2.5	2.5	2.5	2.7
51	2.5	2.5	2.5	2.5
52	2.6	2.5	2.5	2.4
53	2.5	2.5	2.5	2.5
54	2.6	2.6	2.5	2.4
55	2.6	2.5	2.6	2.5
56	2.7	2.6	2.6	2.5
57	2.5	2.5	2.5	2.5
58	2.5	2.5	2.5	2.5
59	2.5	2.5	2.5	2.5
60	2.6	2.5	2.5	2.5
61	0	0	0	0
62	2.6	2.5	2.6	2.5
63	2.6	2.6	2.5	2.5
64	0	0	0	0
IC501				
1	0	0	0	0.5
2	0	0	0	0
3	3.5	3.5	3.5	3.5
4	0.4	0.4	0.4	0.4
5	1.9	1.9	1.8	1.9
6	2.8	2.7	2.8	2.8
7	4.8	4.8	4.8	4.8
8	2.7	2.8	2.8	2.8
9	2.8	2.8	2.7	2.7
10	2.7	2.7	2.8	2.7
11	2.9	2.9	2.9	2.9
12	1.7	1.7	1.7	1.7
13	3.5	3.5	3.5	3.5
14	1.3	1.3	1.3	1.3
15	2.2	2.2	2.2	2.2
16	2.2	2.2	2.2	2.2
17	2.2	2.2	2.2	2.2
18	2.1	2.2	2.2	2.2
19	2.9	3.1	2.8	3.1
20	2.2	2.2	2.2	2.2
21	2.0	2.1	2.0	2.1
22	0	0	0	0
23	2.2	2.2	2.2	2.2
24	2.9	0	0	0
25	2.8	2.9	2.9	2.9
26	2.8	2.8	2.8	2.8
27	2.2	2.2	2.2	2.2
28	0.8	2.2	2.2	2.2
29	2.4	0	0	0
30	3.0	3.0	3.0	3.0
31	2.3	2.4	2.3	3.0
32	2.9	2.9	2.9	2.9
33	2.3	2.6	2.3	3.0
34	2.8	2.8	2.8	2.8
35	1.7	2.5	1.8	2.6
36	0	0	0	0
37	2.1	2.1	2.1	2.1
38	0.4	0.5	0.5	0.4
39	2.3	2.6	2.3	2.0
40	3.4	3.5	3.4	3.6
41	2.9	2.2	2.9	2.2
42	1.9	1.4	1.9	1.5
43	3.4	3.3	3.4	3.4
44	2.1	2.6	2.1	2.1
45	1.5	1.5	1.5	1.5
46	2.4	2.4	2.4	2.4
47	1.7	1.7	1.7	1.7
48	2.4	2.4	2.4	2.4
49	1.7	1.4	1.9	1.4
50	2.3	2.4	2.3	2.4
51	3.2	2.8	3.2	3.2
52	3.1	0	0	0
53	3.1	3.1	3.2	3.2
54	2.2	2.3	2.2	2.4
55	3.0	3.1	3.0	3.1
56	1.4	1.4	1.4	1.4
57	2.4	2.5	2.3	2.4
58	1.4	1.4	1.6	1.7
59	0	0.9	0	0.9
60	2.7	2.9	2.6	2.8
61	0	1.0	0	1.0

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
62	2.3	0.6	2.3	0.4
63	2.3	0.5	2.3	0
64	0	4.8	0	0
65	4.8	4.8	4.8	4.8
66	0	0	4.1	4.1
67	0	2.8	0	2.9
68	2.0	2.0	1.9	1.9
69	0	0.4	0	0
70	3.1	4.1	3.1	4.1
71	4.9	4.9	5.0	4.9
72	0	0	0	0
73	1.4	1.4	1.5	1.5
74	2.9	2.9	2.9	2.9
75	2.3	2.3	2.3	2.3
76	2.9	2.9	2.9	2.9
77	2.9	2.9	2.9	2.9
78	4.8	4.8	4.8	4.8
79	2.2	2.2	2.2	2.2
80	2.1	4.1	2.1	4.1
IC502				
1	0	0	0	2.4
2	3.4	2.3	0	0
3	0	0	4.1	4.1
4	4.4	2.2	4.3	2.2
5	0	0	2.5	2.5
6	3.0	3.0	3.0	3.0
7	0	0	0	0
8	2.1	2.1	1.8	2.1
9	0	4.2	4.2	4.2
10	0	0	4.1	4.1
11	2.1	2.1	2.1	2.1
12	2.9	2.9	2.6	2.6
13	0	3.0	0	0
14	2.7	2.7	3.0	3.1
15	2.7	2.7	3.0	3.1
16	4.0	4.0	4.0	4.0
17	0	1.5	1.5	1.5
18	4.9	4.9	4.9	4.9
19	0	3.7	3.7	3.7
20	2.8	2.7	2.7	2.7
IC503				
1	0.7	3.4	1.1	3.4
2	0	0	0	0
3	0.4	3.0	0.7	3.0
4	0	0	0	0
5	0	0	0	0
6	0	3.6	0.6	3.6
7	0	2.7	0	2.5
8	0.7	4.9	1.1	4.9
IC504				
1	4.4	0	4.3	0
2	0	0	0	0
3	1.0	1.0	1.0	1.0
4	3.0	3.0	3.0	3.0
5	2.9	2.9	2.9	2.9
6	4.6	4.6	4.6	4.6
7	2.3	2.0	2.2	2.0
8	1.6	1.4	1.6	1.4
9	1.6	1.4	1.6	1.4
10	2.4	2.4	2.4	2.4
11	2.4	2.4	2.4	2.4
12	2.4	2.4	2.4	2.4
13	0	0	0	0
14	3.1	3.0	3.1	3.1
15	3.0	3.0	3.0	3.0
16	3.1	3.1	3.1	3.1
IC505				
1	0	0	0	0
2	2.4	2.4	2.4	2.4
3	1.4	1.4	1.4	1.4
4	3.2	3.2	3.2	3.2
5	4.9	4.9	4.9	4.9
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	2.8	2.8	2.8	2.8
11	0	0	0	0
12	9.8	9.8	9.8	9.8
13	0	0	0	0
14	4.9	4.9	4.9	4.9
15	2.4	2.3	2.4	2.3
16	0	0	0	0

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
IC506				
1	0	0	0	0
2	2.9	2.9	2.9	2.9
3	0	0	0	0
4	2.7	2.7	2.7	2.7
5	0	0	0	0
6	2.0	2.0	1.9	1.9
7	4.9	4.9	4.9	4.9
8	2.1	2.2	2.1	2.1
IC507				
1	2.1	2.0	2.1	2.1
2	0	0	0	0
3	1.8	1.8	1.8	1.8
4	0	0	0	0
5	2.2	2.2	2.2	2.2
6	4.9	5.0	4.9	4.9
7	1.4	1.4	1.4	1.4
8	0	0	0	0
IC508				
1	0.7	0.6	0.8	0.6
2	0.5	0.5	0.5	0.4
3	0	0	0	0
4	4.9	4.9	4.9	4.9
5	2.0	2.0	2.0	2.0
6	0	0	0	0
7	2.1	2.1	2.1	2.1
8	0	0	0	0
9	2.2	2.3	2.2	2.5
10	2.2	2.4	2.2	2.5
11	2.2	2.3	2.2	2.5
12	2.2	2.2	2.2	2.5
13	0	0	0	0
14	0	0	0	0
15	2.5	2.5	2.5	2.6
16	4.9	4.9	4.9	4.9
IC509				
1	1.8	1.9	1.8	1.9
2	3.6	3.6	0	0
3	1.9	1.9	1.9	1.9
4	0	0	0	0
5	1.8	1.8	1.8	1.8
6	0	0	3.1	3.1
7	1.8	1.8	1.9	1.9
8	3.6	3.6	3.5	3.6
IC510				
1	0	0	0	0
2	0	0	0	0
3	3.5	3.5	3.5	3.5
4	0	0	0	0
5	1.7	1.7	1.4	1.4
6	2.0	2.0	2.0	2.0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	3.2	3.2	2.6	2.6
12	2.7	2.7	3.0	3.0
13	4.1	4.1	1.7	1.7
14	2.4	2.4	1.5	1.5
15	5.0	5.0	4.9	4.9
16	5.0	5.0	4.9	4.9
IC511				
1	0	0	0	0
2	1.4	1.5	1.5	1.5
3	0	0	1.9	1.9
4	1.4	1.5	1.6	1.6
5	1.4	1.5	1.4	1.4
6	1.6	1.6	1.6	1.6
7	1.5	1.5	1.5	1.5
8	3.1	3.1	3.0	3.1
9	5.0	5.0	5.0	5.0
10	1.6	1.6	1.6	1.6
11	0	0	0	0
12	0	0	0	0
13	3.5	3.6	3.6	3.6
14	0	0	0	0
15	1.9	1.4	1.9	1.4
16	0	0	0	0
IC512				
1	0	0	0	0
2	0	0	0	0
3	4.9	4.9	4.9	4.9
4	3.4	3.4	3.4	3.4

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
5	1.6	1.5	1.5	1.5
6	3.1	3.0	3.0	3.0
7	2.1	2.1	2.1	2.1
8	10.0	10.0	10.0	10.0
IC601				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
23	-	-	-	-
24	-	-	-	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	-	-	-	-
29	-	-	-	-
30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-
41	-	-	-	-
42	-	-	-	-
43	-	-	-	-
44	-	-	-	-
45	-	-	-	-
46	-	-	-	-
47	-	-	-	-
48	-	-	-	-
49	-	-	-	-
50	-	-	-	-
51	-	-	-	-
52	-	-	-	-
53	-	-	-	-
54	-	-	-	-
55	-	-	-	-
56	-	-	-	-
57	-	-	-	-
58	-	-	-	-
59	-	-	-	-
60	-	-	-	-
61	-	-	-	-
62	-	-	-	-
63	-	-	-	-
64	-	-	-	-
Q1				
E	3.5	3.5	3.5	3.5
C	0	0	0	0
B	3.6	3.6	3.6	3.6
Q2				
E	0	0	0	0
C	3.5	3.5	3.4	3.5
B	0	0	0	0
Q3				
E	0	0	0	0
C	0	4.9	0	4.9
B	3.6	0	3.6	0
Q4				
E	0	0	0	0

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
C	0	0	0	0
B	3.6	0	3.6	0
Q8				
E	0	0	0	0
C	0	2.4	2.4	2.4
B	0	0	0	0
Q11				
E	0	0	0	0
C	6.9	6.9	6.9	6.9
B	0	0	0	0
Q12				
E	6.8	6.8	6.8	6.8
C	0	0	0	0
B	6.9	6.9	6.9	6.9
Q50				
E	3.5	3.5	3.5	3.5
C	3.6	0	3.6	0
B	0	3.6	0	3.6
Q51				
E	3.5	3.5	3.5	3.5
C	0	0	0	0
B	3.6	3.6	3.6	3.7
Q52				
E	0	0	0	0
C	4.4	0	4.4	0
B	0	3.6	0	3.6
Q201				
E	0	0	0	0
C	0	0	0	0
B	0.8	0	0.8	0
Q351				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	1.2	1.2	1.2	1.2
9	2.9	7.5	2.9	3.0
10	1.2	1.2	1.2	1.3
11	2.9	3.0	2.9	3.0
12	1.2	1.2	1.2	1.3
13	2.9	3.0	2.9	2.9
14	3.4	3.5	3.4	3.5
Q401				
E	5.0	5.0	5.0	5.0
C	4.8	0	4.8	0
B	0	5.0	0	5.0
Q402				
E	4.8	0	4.8	0
C	4.6	0.4	4.6	0.4
B	0	0	0	0
Q403				
E	0	0	0	0
C	0	0.4	4.5	0.4
B	0.4	0.4	0.4	0.4
Q404				
E	5.0	5.0	5.0	5.0
C	-17.1	4.9	-16.9	4.9
B	5.0	0	4.9	0
Q405				
E	0	0	0	0
C	4.9	0	5.0	0
B	0	4.1	0	4.0
Q406				
1	0	0	0	0
2	0	0	0	0
3	-17.1	0.8	-16.3	0.9
4	-11.3	0	-10.4	0
5	-17.5	0.8	-16.6	0.9
Q407				
E	0	0	0	0
C	0	4.0	0	4.0
B	3.9	0	3.9	0
Q408				
E	0	0	0	0
C	0	0	0	0
B	3.9	0	3.9	0
Q409				
E	0	0	0	0
C	0	0	0	0
B	4.0	4.0	4.0	4.0
Q410				
E	0	0	0	0
C	4.0	4.0	4.0	4.0
B	0	0	0	0
Q412				
E	0	0	0	0
C	0	5.0	0	5.0
B	3.7	0	3.7	0
Q413				
E	0	0	0	0
C	0	0.4	0	0
B	0	0	0	0
Q414				
E	0	0	0	0
C	0	0	0	0
B	0	0	0	0
Q451				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
Q452				
E	4.5	4.5	4.5	4.5
C	0	0	0	0
B	5.0	5.0	5.0	5.0
Q453				
E	2.8	1.2	1.3	1.2
C	4.6	3.4	3.5	3.4
B	3.4	1.8	1.9	1.8
Q454				
E	1.2	2.7	2.8	2.7
C	3.4	4.5	4.6	4.5
B	1.6	3.4	3.4	3.3
Q455				
E	0	0	0	0
C	0	0	0	0
B	0	3.6	0	3.5
Q502				
1	4.8	4.8	4.8	4.8
2	2.2	4.1	2.2	4.1
3	0	3.5	0	3.5
4	1.6	1.5	1.5	1.5
5	0.9	0.9	0.9	0.9
6	1.6	3.5	1.6	3.6
Q503				
E	5.0	5.0	5.0	5.0
C	0.7	4.9	1.1	4.9
B	4.9	4.3	4.9	4.3
Q504				
1	0.7	4.9	0	4.9
2	0	4.9	0	4.9
3	0	0	1.1	0
4	0	1.6	0.5	3.6
5	1.4	0	0	0
Q505				
E	0.5	3.4	1.1	4.2
C	0	0	0	0.8
B	0.6	3.5	0.8	3.6
Q506				
E	0	1.3	1.7	1.7
C	0.7	4.9	1.8	3.4
B	0	0	2.5	2.3
Q507				
E	0	0	0	0
C	0	0	0	0
B	0	0	4.0	4.1
Q508				
E	2.6	2.6	2.6	2.6
C	4.3	4.3	4.3	4.2
B	3.2	3.2	3.2	3.2
Q509				
E	5.0	5.0	5.0	5.0
C	0	3.9	3.9	3.9
B	4.3	4.3	4.3	4.3
Q510				
E	3.3	3.3	3.3	3.2
C	5.0	5.0	5.0	5.0
B	3.9	3.9	3.9	3.9
Q511				
1	0	0	1.1	4.2
2	1.4	2.2	0	0
3	0	0	0	0
4	0	0	0	0
5	3.6	3.6	0	0
Q512				
E	0	0	0	0
C	0	3.0	0	3.0
B	4.4	0	4.4	0
Q514				
E	0	0	0	0
C	0	0	0	0
B	3.6	3.5	0	0
Q515				
E	1.9	1.9	1.8	1.9
C	0	0	0	0
B	1.2	1.3	1.2	1.3
Q516				
E	2.7	2.7	2.7	2.8
C	5.0	4.9	4.8	4.9
B	3.4	3.4	3.3	3.4
Q517				
E	1.2	1.2	1.1	1.2
C	5.0	5.0	5.0	5.0
B	1.8	1.8	1.7	1.8
Q518				
E	3.1	3.1	3.1	3.1
C	5.0	5.0	5.0	5.0
B	3.7	3.7	3.7	3.8
Q519				
E	0.7	0.7	0.7	0.8
C	4.9	4.9	4.9	4.9
B	1.3	1.3	1.3	1.3
Q520				
1	4.8	4.8	4.8	4.8
2	4.8	4.6	4.8	4.8
3	4.8	4.8	4.8	4.8
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
Q521				
1	4.8	4.8	4.8	4.8
2	4.8	4.8	4.8	4.8
3	0	0	0	0
4	1.5	2.6	1.6	2.3
5	2.1	2.6	2.1	2.7
Q522				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
Q523				
1	0	0	0	0
2	3.7	3.7	3.6	3.6
3	0	0	0	0
4	0	0	0	0
5	3.6	3.6	3.7	3.6
6	0	0	0	0
Q524				
E	2.2	2.2	2.2	2.2
C	0	0	0	0
B	1.7	1.7	1.7	1.7
Q525				
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	3.6	3.4	3.6	3.4
Q526				
E	0	0	0	0
C	0	4.9	0	4.9
B	4.4	0	4.4	0
Q530				
1	4.4	4.4	4.4	4.4
2	4.4	4.4	4.4	4.3
3	4.9	4.9	4.9	4.9
4	3.2	3.3	3.3	3.2
5	3.2	3.3	3.2	3.2
6	2.6	2.6	2.6	2.6
Q532				
1	4.2	4.2	4.2	4.2
2	4.2	4.2	4.2	4.2
3	4.8	4.8	4.8	4.8
4	1.0	1.0	1.0	1.4

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
5	1.2	1.2	1.2	1.3
6	0	0.7	0.6	0.8
Q533				
E	1.6	1.6	1.6	1.8
C	0	0	0	0
B	1.0	0.9	0.9	1.4
Q537				
E	5.0	5.0	5.0	5.0
C	2.1	2.0	2.0	2.0
B	4.9	4.8	4.9	4.8
Q538				
E	0	0	0	0
C	4.9	4.8	4.8	4.8
B	0	0	0	0
Q539				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q601				
E	0	0	0	0
C	-	-	-	-
B	0	3.6	3.6	3.6
Q603				
E	5.0	5.0	5.0	5.0
C	5.0	0	4.9	0
B	4.3	5.0	4.3	5.0
Q604				
E	5.0	5.0	5.0	5.0
C	0	4.8	0	4.8
B	5.0	4.3	4.8	4.3
Q605				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
Q606				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
Q609				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q610				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q611				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q613				
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
Q615				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q616				
E	5.0	5.0	5.0	5.0
C	-	-	-	-
B	4.3	5.0	4.3	5.0
Q617				
E	-	-	-	-
C	0	5.0	0	5.0
B	-	-	-	-
Q618				
E	-	-	-	-
C	-	-	-	-
B	-	-	-	-
Q701				
E	5.0	5.0	5.0	5.0
C	4.8	0	4.8	0
B	4.3	0	4.3	0

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
Q702				
E	0.4	0	0.4	0
C	0	0	0	0
B	0	0	0	0
Q703				
E	0.4	0.4	0.4	0.4
C	4.7	0	4.7	0
B	0.8	0	0.8	0
Q704				
E	0	0	0	0
C	0	0	0.4	0
B	0.9	0	0.9	0

〈REAR〉

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
IC31				
1	0	1.2	1.2	1.2
2	0.5	0.5	0.5	0.5
3	0	0.5	0.5	0.5
4	1.2	1.2	1.2	1.2
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	6.8	6.8	6.6	6.7
9	10.6	10.6	10.3	10.4
10	0	0	0	0
11	12.9	12.9	12.9	12.9
12	7.0	6.7	6.9	6.7
13	6.6	6.6	6.6	6.6
14	1.4	1.4	1.5	1.5
15	0.6	0.6	0.6	0.6
16	0.6	0.6	0.5	0.6
IC101				
1	5.2	5.2	5.2	5.2
2	6.2	6.1	6.1	6.1
3	4.3	4.3	4.3	4.3
4	0	0	0	0
5	1.7	0	1.7	1.7
6	1.4	0	1.3	1.3
7	1.3	0.9	1.3	1.3
8	3.6	3.6	3.6	3.6
9	0	0	0	0
10	1.5	1.5	1.5	1.5
11	1.3	1.3	1.3	1.3
12	1.3	1.3	1.3	1.4
13	5.0	5.0	5.0	5.0
14	0	0	0	0
15	0	1.9	1.9	1.9
16	1.3	1.3	1.4	1.3
17	1.4	1.7	1.4	1.7
18	6.8	6.8	6.8	6.8
19	2.6	2.6	2.6	2.6
20	0	6.9	6.9	6.9
21	6.9	6.9	6.9	6.9
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	1.3	0	1.3	1.3
26	0	0	0	0
27	2.5	2.5	2.5	2.5
28	2.6	2.6	2.6	2.6
29	0	0	0	0
30	1.3	1.3	1.3	1.3
31	0	0	0	0
32	2.5	2.5	2.5	2.5
33	0	0	0	0
34	6.9	6.9	6.9	6.9
35	6.4	6.4	6.4	6.4
36	6.9	6.9	6.9	6.9
37	6.4	6.4	6.4	6.4
38	0	0	0	0
39	0	0	6.9	6.9
40	0	6.2	6.9	6.9
41	0	0	0	0
42	0	0	0	0
43	0	6.2	2.6	6.2
44	0	6.3	6.3	6.3
45	6.9	6.9	6.9	6.9
46	0	6.5	6.5	6.5
47	2.4	2.5	2.4	2.4
48	6.7	6.7	6.7	6.7

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
IC102				
1	6.8	6.8	6.8	6.8
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
IC103				
1	5.0	5.0	5.0	5.0
2	6.8	6.8	6.8	6.8
3	0	0	0	0
4	0	0	0	0
Q31				
G	9.0	9.0	9.2	9.1
D	6.8	6.8	6.8	6.8
S	6.6	6.5	6.7	6.6
Q33				
G	0	0	0	0
D	3.9	3.9	4.0	3.8
S	0	0	0	0
Q34				
G	6.3	6.2	6.3	6.2
D	6.8	6.8	6.8	6.8
S	4.3	4.2	4.3	4.0
Q35				
G	0	0	0	0
D	6.0	6.0	6.0	6.0
S	0	0	0	0
Q38				
E	0	0	0	0
C	0	0	0	0
B	3.6	3.5	3.5	3.5
Q39				
E	6.8	6.8	6.8	6.8
C	0	0	0	6.9
B	0	0	0	0
Q101				
E	6.8	6.8	6.8	6.8
C	4.2	4.2	4.0	4.1
B	6.5	6.5	6.5	6.5
A	0	0	0	0
Q102				
E	6.8	6.8	6.8	6.8
C	6.3	7.0	5.8	4.0
B	0	6.3	6.3	6.5
A	0	0	0	0
Q103				
E	6.8	6.8	6.8	6.8
C	0	0	0	0
B	6.9	6.9	6.9	6.9
A	0	0	0	0
Q104				
E	6.8	6.8	6.8	6.8
C	0	0	0	0
B	6.9	6.9	6.9	6.9
Q105				
E	6.8	6.8	6.8	6.8
C	6.9	6.9	6.9	6.9
B	0	0	0	0
Q106				
E	0	0	0	0
C	0	0	0	0
B	0	3.6	3.5	3.5
Q107				
E	6.9	6.9	6.9	6.9
C	0	0	0	0
B	6.9	6.9	6.9	6.9
Q108				
E	0	0	0	0
C	0	6.9	6.9	6.9
B	0	0	0	0

〈MIC AMP〉

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
IC1				
1	2.4	2.3	2.4	2.3
2	2.5	2.5	2.4	2.5
3	2.4	2.4	2.4	2.4
4	2.5	2.4	2.4	2.4
5	2.4	2.4	2.4	2.4
6	2.4	2.4	2.4	2.4
7	2.4	2.4	2.5	2.4
8	2.3	2.2	2.4	2.2

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
9	0	0	0	0
10	2.4	2.4	2.4	2.4
11	2.5	2.5	2.5	2.5
12	2.4	2.4	2.5	2.4
13	5.0	5.0	5.0	5.0
14	2.5	2.5	2.5	2.5
15	2.5	2.5	2.4	2.5
16	0	0	0	0
17	2.4	0	2.4	0
18	2.5	2.4	2.5	2.4
19	2.4	2.4	2.4	2.4
20	2.4	2.4	2.4	2.4
21	2.4	2.4	2.4	2.4
22	2.5	2.4	2.4	2.4
23	2.5	2.4	2.5	2.4
24	0	0	0	0
25	2.4	2.4	2.4	2.4
26	1.4	0	1.4	0
27	1.5	1.4	1.4	1.4
28	0	0	0	0
29	2.7	0	2.7	0
30	2.4	2.4	2.4	2.4
31	2.4	2.4	2.4	2.4
32	2.4	2.4	2.4	2.4
IC101				
1	5.0	5.0	5.0	5.0
2	0	0	0	0
3	0	0	0	0
4	0.4	0	0	0
5	5.0	5.0	5.0	5.0
6	0.5	0	0	0
7	0.4	0	0	0
8	3.7	3.7	3.7	3.7
9	5.0	5.0	5.0	5.0
10	5.0	5.0	5.0	5.0
11	5.0	5.0	5.0	5.0
12	4.9	5.0	5.0	5.0
13	5.0	5.0	5.0	5.0
14	0	0	0	0
15	0	0	0	0
16	5.0	5.0	5.0	5.0
17	5.0	5.0	5.0	5.0
18	0	0	0	0
19	0	0	0	0
20	5.0	5.0	5.0	5.0
21	0	0	0	0
22	2.3	2.4	2.2	2.4
23	0	0	0	0
24	0	0	0	0
Q5				
E	0	0	0	0
C	0	0	0	0
B	0.7	0.7	0.7	0.7
Q101				
E	2.0	2.0	2.0	2.0
C	5.0	5.0	5.0	5.0
B	2.6	2.6	2.6	2.6
Q102				
E	0	0	0	0
C	0	0	0	0
B	0.8	0.8	0.8	0.8

<TRANS>

MODE /PIN	VHS REC	VHS PB	S-VHS REC	S-VHS PB
Q201				
E	0	0	0	0
C	5.0	5.0	5.0	5.0
B	0.8	0.8	0.8	0.8

<CCD>

MODE /PIN	EE
IC101	
1	0
2	0
3	0
4	1.7
5	3.3
IC102	
1	3.3
2	1.7
3	0
4	1.8
5	3.3
IC103	
1	3.3
2	0.4
3	2.8
4	0
5	1.5
6	0
7	3.3
8	1.7
9	1.5
10	3.3
11	3.3
12	3.3
13	0
14	1.6
IC104	
1	1.8
2	1.6
3	0.4
4	0
5	0
6	0
7	0
8	3.3
IC105	
1	3.3
2	0
3	0
4	1.6
5	3.3
IC106	
1	0
2	3.0
3	0
4	0
5	3.3
IC201	
1	3.3
2	NC
3	3.0
4	3.1
5	3.0
6	NC
7	NC
8	0.5
9	0.5
10	0.5
11	3.3
12	0
13	0
14	NC
15	5.0
16	0.4
17	3.3
18	0.4
19	0
20	1.6
21	3.3
22	NC
23	0
24	0
25	3.3
26	0
27	0
28	0
29	3.3
30	0
31	3.3
32	5.0
33	3.3
34	5.0
35	2.2
36	2.7
37	11.3
38	0
39	0
40	-
41	-
42	-
43	1.0
44	-
45	0.8
46	3.3
47	NC
48	5.0
49	3.3
50	NC
51	0
52	3.3
53	0
54	3.0
55	NC
56	0
57	NC
58	NC
59	NC
60	3.3
61	NC
62	0
63	NC
64	5.0
IC301	
1	-6.1
2	-7.0
3	3.3
4	0
5	0
6	3.3
7	0
8	3.3
9	0
10	3.3
11	0
12	0
13	0
14	3.1
15	0
16	3.3
17	0
18	-6.4
19	3.6
20	14.9
IC401	
1	0
2	2.1
3	5.0
4	0
5	0.5
6	0
7	0
8	2.1
9	2.4
10	2.0
11	5.0
12	2.0
13	1.5
14	3.5
15	0
16	2.0
17	1.6
18	0
19	4.9
20	3.4
21	1.7
22	1.2
23	1.2
24	0
25	0
26	2.1
27	1.7
28	0
29	2.1
30	0
31	2.0
32	2.1
33	0
34	0
35	1.4
36	1.1
37	2.0
38	0
39	2.9
40	5.0
41	0.8
42	1.0
43	0
44	0
45	0
46	1.7
47	1.8
48	0
Q301	
E	3.6
C	5.0
B	0
Q302	
1	11.2
2	0
3	2.1
4	11.8
5	1.5
6	16.3
Q303	
1	-
2	9.9
3	2.5
4	9.9
5	2.0
6	16.5
Q401	
E	5.8
C	16.5
B	6.5
Q402	
E	-
C	-
B	-

<PROCESS>

MODE /PIN	EE
IC101	
1	0
2	1.0
3	1.9
4	1.2
5	1.6
6	1.9
7	1.6
8	1.7
9	1.6
10	3.3
11	0
12	0.3
13	1.7
14	0
15	0
16	0.5
17	0
18	0
19	3.3
20	3.3
21	0
22	3.2
23	3.2
24	3.2
25	3.2
26	3.2
27	3.2
28	3.2
29	3.1
30	3.3
31	0
32	-
33	0.9
34	0.6
35	0.9
36	0.7
37	1.1
38	0
39	1.5
40	0
41	1.2
42	1.7
43	1.7
44	1.7
45	1.9
46	1.8
47	1.7
48	1.7
49	1.8
50	3.3
51	0
52	1.8
53	1.5
54	1.7
55	1.7
56	1.6
57	1.8
58	2.0
59	1.0
60	0.6
61	3.3
62	2.4
63	1.7
64	0.3
65	0.3
66	3.0
67	3.1
68	0
69	0
70	3.3
71	0
72	1.6
73	0
74	0
75	0
76	3.3
77	0
78	0.8
79	0.9
80	0
IC102	
1	0
2	0
3	0
4	0
5	1.7
6	0
7	0
8	0
9	0
10	0
11	0
12	3.3
13	3.3
14	0
15	0
16	0
17	0
18	0
19	0
20	3.3
21	0
22	0
23	0
24	0
25	0.9
26	0
27	3.0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	-
36	-
37	-
38	-
39	-
40	-
41	-
42	-
43	-
44	-
45	-
46	-
47	-
48	-
IC103	
1	3.3
2	3.3
3	-
4	-
5	-
6	3.3
7	0
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	-
16	0.4
17	0
18	3.3
19	3.3
20	3.3
21	0
22	3.3
23	0
24	1.0
25	2.3
26	0
27	2.6
28	1.0
29	2.9
30	2.7
31	2.4
32	3.1
33	3.0
34	0.3
35	3.3
36	3.3
37	3.2
38	3.3
39	0
40	0
41	3.3
42	0
43	0
44	0
45	1.3
46	1.0
47	0.3
48	1.3
49	0.6
50	1.1
51	0
52	1.4
53	-
54	-
55	-
56	-
57	-
58	-
59	-
60	-
61	-
62	-
63	-
64	-
IC104	
1	-
2	-
3	-
4	-
5	-
IC201	
1	3.0
2	0
3	0
4	3.3
5	3.3
6	3.3
7	3.0
8	0
9	3.2
10	0.9
11	0
12	1.5
13	0
14	3.3
15	0
16	0.3
17	0
18	-
19	2.3
20	2.3
21	2.7
22	1.0
23	2.9
24	2.7
25	2.4
26	3.1
27	3.0
28	0
29	3.3
30	3.3
31	3.2
32	3.3
33	0
34	3.3
35	3.3
36	3.3
37	1.0
38	1.0
39	1.0
40	1.1
41	1.0
42	1.0
43	1.0
44	1.0
45	0
46	3.3
47	1.0
48	1.0
49	1.1
50	1.0
51	2.0
52	1.3
53	0.9
54	0.6
55	0
56	3.3
57	1.9
58	1.9
59	1.9
60	2.0
61	1.9
62	1.9
63	1.9
64	2.0
65	1.8
66	1.8
67	1.8
68	1.7
69	1.9
70	2.0
71	1.3
72	0.9
73	0
74	1.1
75	0
76	0
77	3.3
78	3.3
79	0
80	0
81	3.2
82	0
83	3.3
84	0
85	0
86	0
87	0
88	0
89	1.2
90	1.2
91	1.2
92	1.3
93	1.3
94	1.3
95	1.3
96	1.3
97	0.6
98	1.0
99	1.7
100	1.5
101	1.3
102	1.3
103	1.3
104	1.3
105	3.3
106	0
107	0.6
108	1.1
109	1.8
110	1.9
111	1.7
112	1.7
113	1.7
114	1.7
115	3.3
116	0
117	1.8
118	1.7
119	1.7
120	1.7
121	1.8
122	1.7
123	1.7
124	1.7
125	0
126	0
127	0.4
128	0.9
IC202	
1	3.3
2	3.3
3	3.3
4	3.3
5	1.1
6	0
7	0
8	3.2
9	3.3
10	0
11	0
12	0
13	1.3
14	1.3
15	1.3
16	1.2
17	1.6
18	2.1
19	1.3
20	0.6
21	0
22	0
23	0
24	1.3
25	1.3
26	1.3
27	1.3
28	1.3
29	1.3
30	1.2
31	1.2
32	0
33	0
34	0
35	0
36	0

MODE /PIN	EE
37	0
38	2.0
39	1.9
40	2.0
41	2.0
42	3.3
43	0
44	2.1
45	1.9
46	1.9
47	1.9
48	0
49	0
50	0.9
51	1.6
52	2.3
53	0
54	3.3
55	0
56	1.7
57	1.8
58	1.8
59	1.8
60	0
61	0
62	0
63	3.3
64	3.2
65	0
66	0
67	0
68	0
69	3.3
70	3.3
IC301	
1	0
2	0
3	0
4	3.6
5	3.3
IC302	
1	0
2	3.3
3	0
4	3.6
5	0
6	0
7	0
8	0
IC303	
1	3.6
2	0
3	0
4	0
5	3.5
6	0
7	0
8	0
9	0
10	3.6
11	3.1
12	0
13	0
14	3.5
15	3.1
16	0
17	3.5
18	0
19	3.5
20	1.9
21	0
22	0
23	0
24	3.5
25	0
26	3.2
27	3.3
28	3.3
29	3.3
30	3.3
31	3.3
32	3.3
33	3.3

MODE /PIN	EE
34	3.3
35	3.3
36	3.3
37	3.3
38	3.3
39	3.3
40	3.2
41	3.3
42	0
43	3.3
44	3.3
45	3.3
46	0
47	3.3
48	3.3
49	1.7
50	0
51	3.3
52	0
53	0.4
54	0
55	1.2
56	0.7
57	0
58	0
59	0
60	1.9
61	1.7
62	3.6
63	0
64	3.6
65	3.6
66	3.6
67	3.6
68	0
69	0
70	0.9
71	2.8
72	0
73	0
74	1.9
75	1.9
76	0
77	0
78	3.6
79	0
80	0
81	0
82	0
83	0
84	0
85	0
86	0
87	3.6
88	3.6
89	3.6
90	3.6
91	0.4
92	0
93	1.5
94	0
95	3.6
96	0
97	1.5
98	0
99	0
100	0
IC304	
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	-

MODE /PIN	EE
16	-
17	-
18	-
19	-
20	-
IC305	
1	3.6
2	0
3	0
4	0
5	3.5
6	0
7	3.5
8	3.6
IC306	
1	2.5
2	2.5
3	2.6
4	0
5	2.6
6	2.5
7	0
8	5.0
IC307	
1	0
2	0
3	0
4	0
5	3.6
IC308	
1	6.4
2	0
3	1.4
4	3.6
5	0
6	7.0
IC401	
1	1.9
2	1.4
3	1.4
4	0.6
5	3.0
6	3.3
7	0
8	3.3
9	0
10	5.0
11	3.8
12	0
13	2.6
14	3.8
15	0
16	1.5
17	0
18	2.5
19	5.0
20	0
21	2.9
22	5.0
23	2.9
24	0
25	4.0
26	0
27	0
28	0
29	3.3
30	0
31	0
32	1.0
33	1.0
34	1.1
35	1.2
36	1.0
37	0
38	0
39	0.8
40	0.9
41	1.8
42	3.3
43	0
44	1.6
45	1.0
46	1.0

MODE /PIN	EE
47	1.1
48	1.0
IC402	
1	1.1
2	0
3	2.5
4	2.5
5	2.2
6	5.0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
IC403	
1	1.9
2	0
3	0.8
4	1.9
5	1.9
6	1.9
7	3.1
8	2.9
9	1.3
10	1.7
11	2.6
12	3.1
13	0
14	5.0
15	0.7
16	0.9
17	3.3
18	0
19	1.4
20	1.9
21	1.9
22	0
23	1.9
24	1.9
IC501	
1	1.5
2	1.9
3	1.8
4	0
5	2.6
6	2.6
7	1.9
8	6.8
IC502	
1	3.0
2	0
3	2.5
4	0
5	2.5
6	2.5
7	2.5
8	5.0
IC503	
1	0
2	3.5
3	0
4	3.5
5	1.6
6	0.4
7	0.4
8	0.4
9	0.4
10	3.5
11	0
12	6.8
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	6.8
21	1.0
22	11.8

MODE /PIN	EE
23	11.8
24	3.8
25	1.9
26	1.9
27	3.7
28	3.6
29	0
30	3.5
IC504	
1	0
2	3.6
3	0
4	3.6
5	1.8
6	0.6
7	0.6
8	0
9	0
10	3.5
11	0
12	6.8
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	6.8
21	1.1
22	11.8
23	11.6
24	3.8
25	1.9
26	1.9
27	0
28	3.6
29	0
30	3.6
IC505	
1	1.5
2	0.8
3	0
4	0
5	2.5
6	2.5
7	2.8
8	5.0
IC506	
1	0
2	1.9
3	0
4	5.0
5	5.0
IC507	
1	0
2	2.5
3	0
4	2.7
5	3.5
Q401	
E	-
C	-
B	-
Q402	
E	2.2
C	5.0
B	2.6
Q403	
E	2.1
C	5.0
B	2.8
Q404	
1	5.0
2	2.0
3	2.1
4	5.0
5	2.5
6	2.1
Q405	
E	-
C	-
B	-

MODE /PIN	EE
Q406	
E	-
C	-
B	-
Q407	
E	-
C	-
B	-
Q501	
E	0
C	0
B	5.0
Q502	
E	6.8
C	6.8
B	6.1
Q503	
E	0.8
C	0
B	1.5
Q504	
1	0
2	0
3	0
4	0
5	0
Q506	
1	0
2	0
3	0
4	0
5	0
Q507	
1	5.0
2	3.7
3	0
4	0
5	4.3
6	3.7
Q508	
E	0
C	5.0
B	0

〈A/D〉

MODE /PIN	EE
IC501	
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	2.5
9	3.3
10	1.7
11	0.9
12	0
13	0
14	0
15	0
16	0.7
17	0.8
18	0
19	1.3
20	3.3
21	1.2
22	1.2
23	1.2
24	1.2
25	0
26	0
27	1.3
28	0
29	1.2
30	0
31	3.3
32	1.8
33	0.8
34	2.8
35	0

MODE /PIN	EE
36	0
37	0
38	0
39	0.7
40	0
41	0
42	0
43	3.3
44	2.2
45	0
46	0
47	0
48	0
IC502	
1	0
2	1.7
3	0
4	2.2
5	5.0
IC601	
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	-
16	-
17	-
18	-
19	-
20	-
21	-
22	-
23	-
24	-
25	-
26	-
27	-
28	-
29	-
30	-
31	-
32	-
33	-
34	-
35	-
36	-
37	-
38	-
39	-
40	-
41	-
42	-
43	-
44	-
45	-
46	-
47	-
48	-
49	-
50	-
51	-
52	-
53	-
54	-
55	-
56	-
57	-
58	-
59	-
60	-
61	-
62	-
63	-

MODE /PIN	EE
64	-

〈E. VF〉

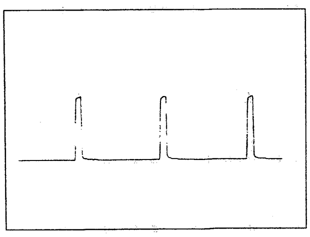
MODE /PIN	EE
IC101	
1	0
2	1.1
3	0
4	0.5
5	0.5
6	0
7	0
8	0.5
9	4.9
10	3.8
11	0
12	0.7
13	0.6
14	0.6
15	0
16	2.6
IC102	
1	0.6
2	0
3	0
4	0.6
5	4.9
IC103	
1	0.6
2	4.9
3	0
4	0
5	0
6	1.1
7	4.5
8	4.9
IC201	
1	0
2	0
3	2.2
4	0
5	0
6	3.0
7	3.6
8	1.1
9	2.0
10	2.0
11	2.0
12	2.8
13	2.9
14	0
15	2.6
16	0
17	0
18	0
19	0
20	6.1
21	2.6
22	6.1
23	2.6
24	6.1
25	12.1
26	2.7
27	2.5
28	0
29	2.5
30	0
31	0
32	0
33	0
34	2.5
35	2.5
36	0
37	0.7
38	2.6
39	0
40	0
41	0
42	2.6
43	5.0
44	1.4
45	2.0

MODE /PIN	EE
46	3.0
47	2.2
48	2.1
IC202	
1	4.9
2	0
3	4.9
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	12.1
14	0
15	0
16	0.9
17	12.1
18	0
19	6.1
20	6.1
21	0
22	5.8
23	5.3
24	0
25	0
26	0
27	0.7
28	2.5
29	2.5
30	0
31	1.5
32	1.5
33	1.5
34	2.5
35	4.8
36	0.6
37	3.1
38	4.9
39	2.5
40	2.5
41	0
42	0
43	4.9
44	4.9
45	4.9
46	0
47	0
48	4.9
Q101	
E	0
C	4.9
B	0
Q102	
1	13.5
2	12.7
3	12.0
4	12.6
5	11.9
Q202	
1	5.8
2	6.4
3	5.8
4	6.4
5	12.1
Q203	
E	0
C	11.8
B	0.6
Q301	
G	0.5
D	6.2
S	0

4.30 WAVEFORMS

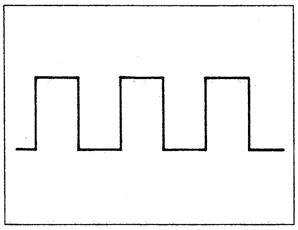
–SYSCON–

WF1 **IC1-56**



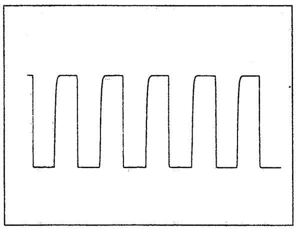
REC/PB 3.5 Vp-p
0.1 Vp-p/0.1msec/DIV

WF2 **IC1-64**



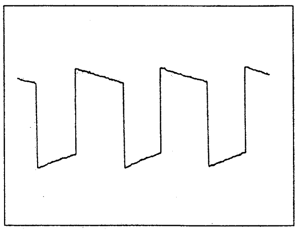
REC/PB 3.5 Vp-p
0.1 Vp-p/20μ sec/DIV

WF3 **IC1-65**



REC/PB 3.5 Vp-p
0.1 Vp-p/0.2msec/DIV

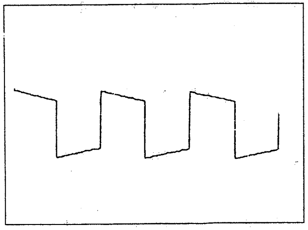
WF4 **IC1-66**



REC/PB 3.5 Vp-p
0.1 Vp-p/2msec/DIV

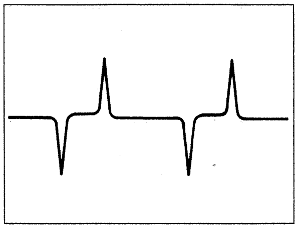
–SERVO–

WF1 **TP251 CTL PULSE**



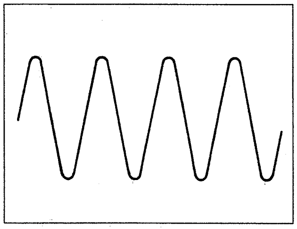
REC 3.0 Vp-p
0.1 Vp-p/2msec/DIV

WF1 **TP251 CTL PULSE**



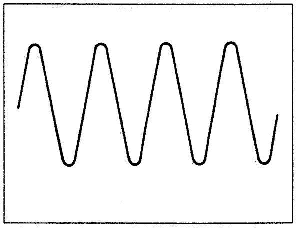
PB 1.3 Vp-p
50mVp-p/2msec/DIV

WF2 **TP301 D.FG**



REC/PB 1.2 Vp-p
50mVp-p/0.1msec/DIV

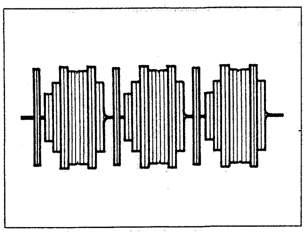
WF3 **TP351 C.FG**



REC/PB 1.5 Vp-p
50mVp-p/0.1msec/DIV

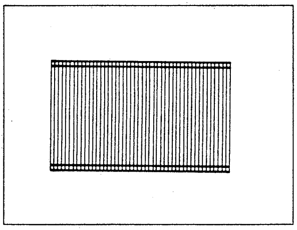
–Y/C–

WF1 **IC501-80**



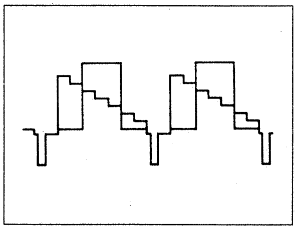
REC 0.6 Vp-p
20mVp-p/5μ sec/DIV

WF2 **IC502-12**



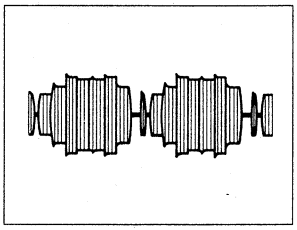
REC 0.3 Vp-p
10mVp-p/50μ sec/DIV

WF3 **IC506-2**



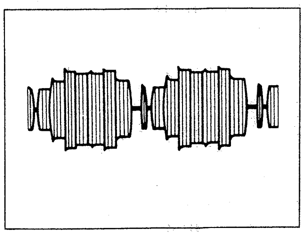
REC/PB 2.0 Vp-p
50mVp-p/5μ sec/DIV

WF4 **IC506-4**



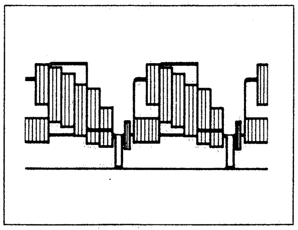
REC/PB 0.1 Vp-p
5mVp-p/1μ sec/DIV

WF5 **IC508-7**



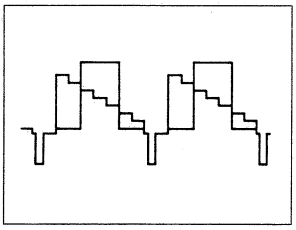
REC/PB 0.4 Vp-p
20mVp-p/5μ sec/DIV

WF6 **IC508-10**



REC/PB 2.5 Vp-p
50mVp-p/5μ sec/DIV

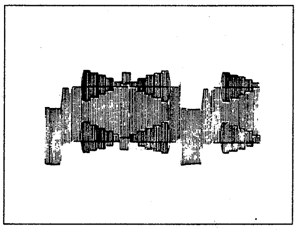
WF7 **IC508-11**



REC/PB 2.5 Vp-p
50mVp-p/5μ sec/DIV

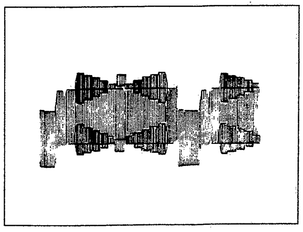
–CCD–

WF1 **TP402 A/D OUT**



0.6 Vp-p
10mVp-p/5μ sec/DIV

WF2 **CN1-4**



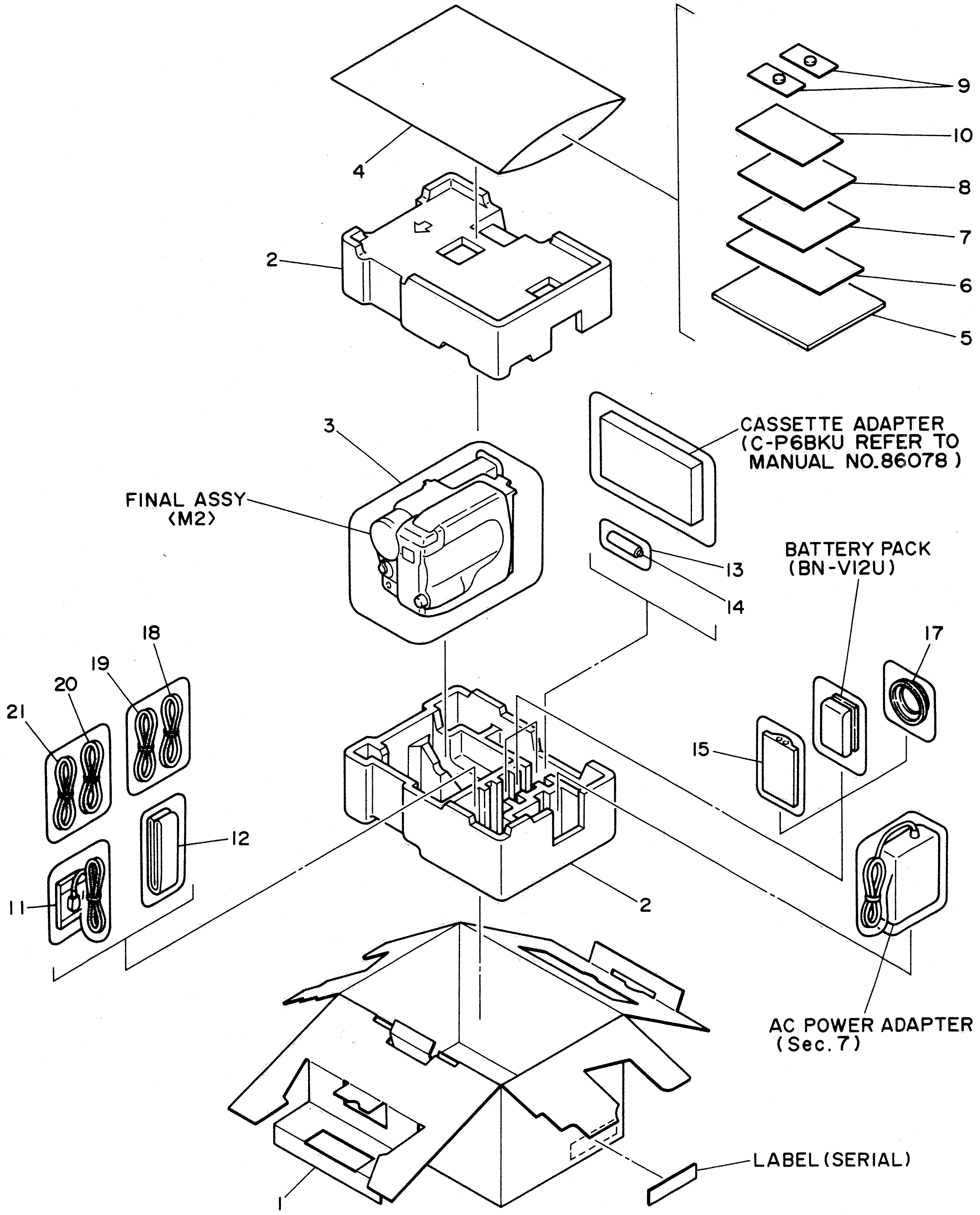
0.4 Vp-p
10mVp-p/5μ sec/DIV

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

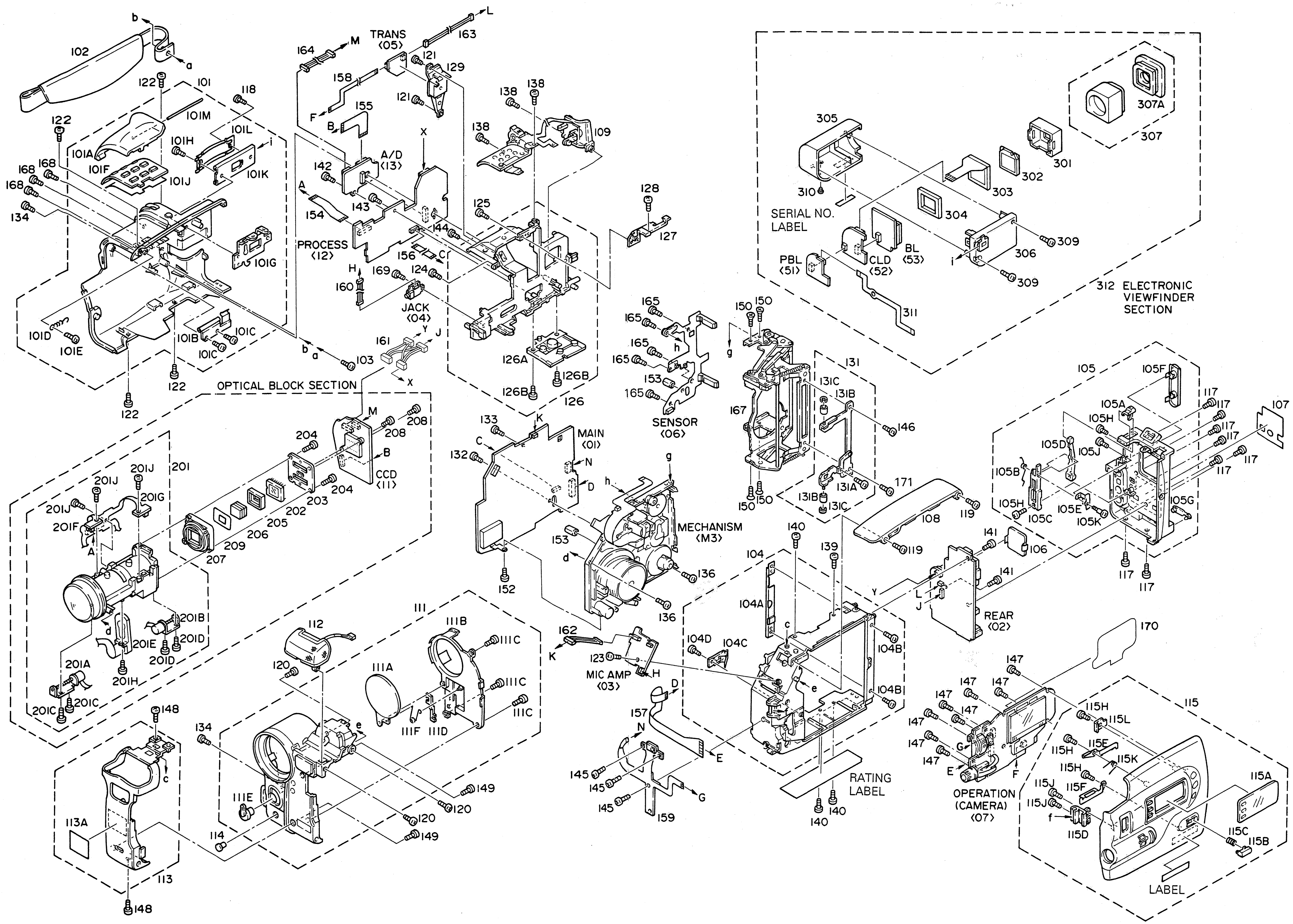

9
10
8
7
6
5
4
2
3
CASSETTE ADAPTER (C-P6BKU REFER TO MANUAL NO.86078)
FINAL ASSY ‹M2›
13
14
BATTERY PACK (BN-V12U)
17
18
19
20
21
15
12
11
2
AC POWER ADAPTER (Sec.7)
LABEL (SERIAL)
1

****

PACKING ASSEMBLY <M1>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	YQ31799	PACKING CASE
	2	YQ31798A	CUSHION ASSY
	3	YQM30021-24	POLY BAG
	4	YQM30061	POLY BAG
⚠	5	YU30052-420	INSTRUCTIONS
⚠	6	YU20333	SAFETY CAUTION
	7	BT-51005-1	WARRANTY INF.
	8	YU42060	INST SHEET
⚠	9	PECA0903	LI BATTERY,X2
	10	BT-51006-1	REGIST.CARD
	11	PEAC0134-01-04	DC PLUG CORD
	12	YQ10188A-1	S STRAP ASSY
	13	QPGA005-01005	POLY BAG
	14	R6PRPA-2ST	BATTERY
⚠	15	YQ20775C	REMOTE CONTROLLER
	17	YQ43764	HOOD(SPECIAL)
	18	PU59205-4	PIN JACK CABLE, VIDEO
	19	PU56142-5	PIN CORD ASSY, AUDIO
	20	PEAC0276	CABLE ASSY, EDITING CABLE
	21	PU61113-3	S CABLE

5.2 FINAL ASSEMBLY <M2>



102
b
a
122
101
118
101M
101H
101L
i
101A
101F
101J
101K
168
168
168
134
101G
101D
101E
101B
101C
101C
122
122
103
b
a
164
M
TRANS
<05>
163
L
121
129
158
F
155
B
121
X
A/D
<13>
142
A
154
143
PROCESS
<12>
144
156
C
169
124
H
160
JACK
<04>
161
Y
J
X
138
138
138
109
125
128
127
126A
126B
126B
126
OPTICAL BLOCK SECTION
M
208
208
204
B
CCD
<11>
204
203
202
205
206
209
207
201
201J
201J
201J
201G
201F
A
201B
201D
201E
201D
201A
201H
201C
201C
d
133
K
C
132
MAIN
<01>
N
D
152
153
d
g
h
MECHANISM
<M3>
136
136
165
165
165
165
165
153
SENSOR
<06>
h
150
150
g
131
131C
131B
167
146
150
150
131B
131A
131C
171
305
307A
307
301
302
303
304
310
SERIAL NO.
LABEL
BL
<53>
CLD
<52>
PBL
<51>
306
309
309
i
311
312 ELECTRONIC
VIEWFINDER
SECTION
105
105F
105A
105H
117
117
117
117
107
105D
105J
105B
105H
105C
105E
105K
105G
117
117
117
117
108
119
119
141
106
141
REAR
<02>
Y
L
J
104
140
139
104A
104D
104C
c
104B
104B
e
RATING
LABEL
140
140
170
111
112
111B
111C
111A
111C
111C
120
111F
111D
e
134
149
120
120
149
111E
114
148
c
113A
113
148
162
K
123
MIC AMP
<03>
H
D
157
N
E
145
145
145
159
G
147
147
147
147
147
147
147
147
G
E
F
OPERATION
(CAMERA)
<07>
115
115H
115L
115E
115H
115K
115H
115F
115J
115J
f
115D
115A
115C
115B
LABEL

****

FINAL ASSEMBLY <M2>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	YQ10500B-10	LOWER CASE ASSY
	101A	YQ20765-1-3	COVER(OPERATION)
	101B	YQ31664	HINGE
	101C	YQM30032-11-2	SPECIAL SCREW,X2 M2X5
	101D	YQ43562	TENSION SPRING
	101E	YQM30032-40	SPECIAL SCREW,M2X4
	101F	YQ31667-2-5	BUTTON(DECK OPE.)
	101G	YQ43504	SHOE HOLDER
	101H	YQM30032-1-2	SPECIAL SCREW,M2X4
	101J	YQ43487	SHEET(OPE.BOTTON)
	101K	YQ31650-1-1	SHOE(VF)
	101L	YQ31652-1-1	SHOE SPRING
	101M	YQ43485	SHAFT
	102	YQ31409-3	GRIP BELT
	103	YQM30032-4-2	SPECIAL SCREW,M2X6
⚠	104	YQ20771B-3	UPPER CASE ASSY
	104A	YQ43502	BRAKET(REAR)
	104B	YQM30032-37	SPECIAL SCREW,X2 M2X3
	104C	YQ31220A-2	TAPE GUIDE ASSY
	104D	YQM30032-40	SPECIAL SCREW,M2X4
⚠	105	YQ20772B-5	REAR COVER ASSY
	105A	YQ43480	KNOB(BATT.RELESE)
	105B	YQ43481	TORSION SPRING
	105C	YQ31659-1-2	BASE(BATT.RELESE)
	105D	YQ31660-1-1	BUTTON(BATT.RELESE)
	105E	YQ43479	BRAKET(BATT.RELESE)
	105F	YQ31680-1-2	CAP(PIN JACK)
	105G	YQ43512-1-1	CAP(JACK)
	105H	YQM30032-44	SPECIAL SCREW,X2 M2X4
	105J	YQM30032-38	SPECIAL SCREW,M2X3
	105K	YQM30060-2	SPECIAL SCREW
⚠	106	YQ30931-1-4	BATTERY COVER
⚠	107	YQ31297-1-1	BATTERY BASE SHEET
⚠	108	YQ20800B	TOP COVER ASSY
	109	YQ10497-2	OPERATION UNIT
⚠	111	YQ10501B-3	FRONT CASE ASSY
	111A	YQ43483-1-2	SHUTTER
	111B	YQ31670-1-2	GUIDE(SHUTTER)
	111C	YQM30032-40	SPECIAL SCREW,X3 M2X4
	111D	YQ43488	LEVER(SHUTTER)
	111E	YQ43489	KNOB(SHUTTER)
	111F	YQ43490-1-1	TORSION SPRING
	112	YQ20759-1-1	MICROPHONE
⚠	113	YQ10503B-3	COVER(FRONT)ASSY
	113A	YQ43772	LABEL(PROTECT)
	114	YQ43518-2	CAP(JACK)
⚠	115	YQ10502B-5	CASSETTE COVER ASSY
	115A	YQ31675-2	LCD WINDOW
	115B	YQ31673-2	BUTTON(PUSH)
	115C	YQM30002-35	SPRING(COMP.)
	115D	YQ43501-1-2	HINGE(CASS.COVER)
	115E	YQ43496-1-2	GUIDE(OPEN)1
	115F	YQ43498-1-1	GUIDE(OPEN)2
	115H	YQM30032-44	SPECIAL SCREW,X3 M2X4
	115J	SPSN2005Z	SCREW,X2
	115K	YQ43761	SPRING(GIUDE)
	115L	YQ43771-1-2	PLATE(GUIDE)
	117	YQM30032-2-2	SPECIAL SCREW,X8 M2X4
	118	YQM30032-1-2	SPECIAL SCREW,M2X3
	119	YQM30032-2-2	SPECIAL SCREW,X2 M2X4
	120	YQM30032-2-2	SPECIAL SCREW,X3 M2X4
	121	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	122	YQM30032-2-2	SPECIAL SCREW,X4 M2X4
	123	YQM30032-2-2	SPECIAL SCREW,M2X4
	124	YQM30032-2-2	SPECIAL SCREW,M2X4
	125	YQM30032-1-2	SPECIAL SCREW,M2X3
	126	YQ31750A-1	FRAME ASSY
	126A	YQ31663-1-2	BASE
	126B	YQM30032-4-2	SPECIAL SCREW,X2 M2X4
	127	YQ43503	BRAKET(FRAME)
	128	SPSH1725M	SCREW
	129	YQ31682-1-2	HOLDER(TRANS)
	131	YQ43520A-3	BKT ASSY
	131A	SPSN2003	SCREW
	131B	YQM30005-11-3	COLLAR,X2
	131C	REE1000	E RING,X2
	132	YQM30060-4	SPECIAL SCREW
	133	YQM30060-1-2	SPECIAL SCREW
	134	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	136	YQM30032-4-2	SPECIAL SCREW,X2 M2X6
	138	YQM30032-2-2	SPECIAL SCREW,X3 M2X4
	139	YQM30032-1-2	SPECIAL SCREW,M2X3
	140	YQM30032-2-2	SPECIAL SCREW,X3 M2X4
	141	YQM30032-2-2	SPECIAL SCREW,X2 M2X4
	142	YQM30032-2-2	SPECIAL SCREW,M2X4
	143	YQM30032-2-2	SPECIAL SCREW,M2X4
	144	YQM30032-4-2	SPECIAL SCREW,M2X6
	145	YQM30032-2-2	SPECIAL SCREW,X3 M2X4
	146	YQM30032-1-2	SPECIAL SCREW,M2X3
	147	YQM30032-2-2	SPECIAL SCREW,X8 M2X4
	148	YQM30032-2-2	SPECIAL SCREW,X2 M2X4
	149	YQM30032-2-2	SPECIAL SCREW,X2 M2X4
	150	SSSH1730M	SCREW,X4
	152	SPSH1725M	SCREW
	153	PEME0898	SPACER,X2
	154	PEWR0732	FPC
	155	PEWR0733	FPC
	156	PEWR0752	FPC
	157	PEWR0730	FPC
	158	PEWR0740-01-01	FPC
	159	PEWR0739	FPC
	160	ML-Y00712A	JACK WIRE
	161	ML-Y00706A	REAR WIRE
	162	ML-Y00713A	MIC WIRE
	163	ML-Y00700B	EL WIRE
	164	ML-Y00702A	CCD WIRE
	165	SPSH1725M	SCREW,X5
	167	YQ31059C-20	HOUSING ASSY
	168	YQM30032-44	SPECIAL SCREW,X3 M2X4
	169	YQM30032-2-2	SPECIAL SCREW,M2X4
⚠	170	YQ43783	SHEET(C.OPE)
	171	YQM30063-5	SPECIAL SCREW

- OPTICAL BLOCK SECTION -

⚠	201	YU30764-2	OP BLOCK ASSY
	201A	YU30764-001	ZOOM MOTOR UNIT
	201B	YU30764-002	FOCUS MOTOR UNIT
	201C	YU30764-003	SCREW,X2
	201D	YU30764-003	SCREW,X2
	201E	YU30764-106	IRIS MOTOR UNIT
	201F	YU30764-007	SENSOR,WIDE
	201G	YU30764-007	SENSOR,INF
	201H	YU30764-010	SCREW
	201J	YU30764-016	SCREW,X3
⚠	202	TCD5481D	CCD ASSY
	203	YQ42533	CCD BASE
	204	SPSN2080D	SCREW,X2
	205	YQ42774-1-3	SPACER RUBBER
	206	YU42040	OPTICAL LPF
	207	YQ31150-2	OPTICAL LPF HOLDER
	208	SPSP2006Z	SCREW,X2
	209	YQ43767	CCD AR SHEET

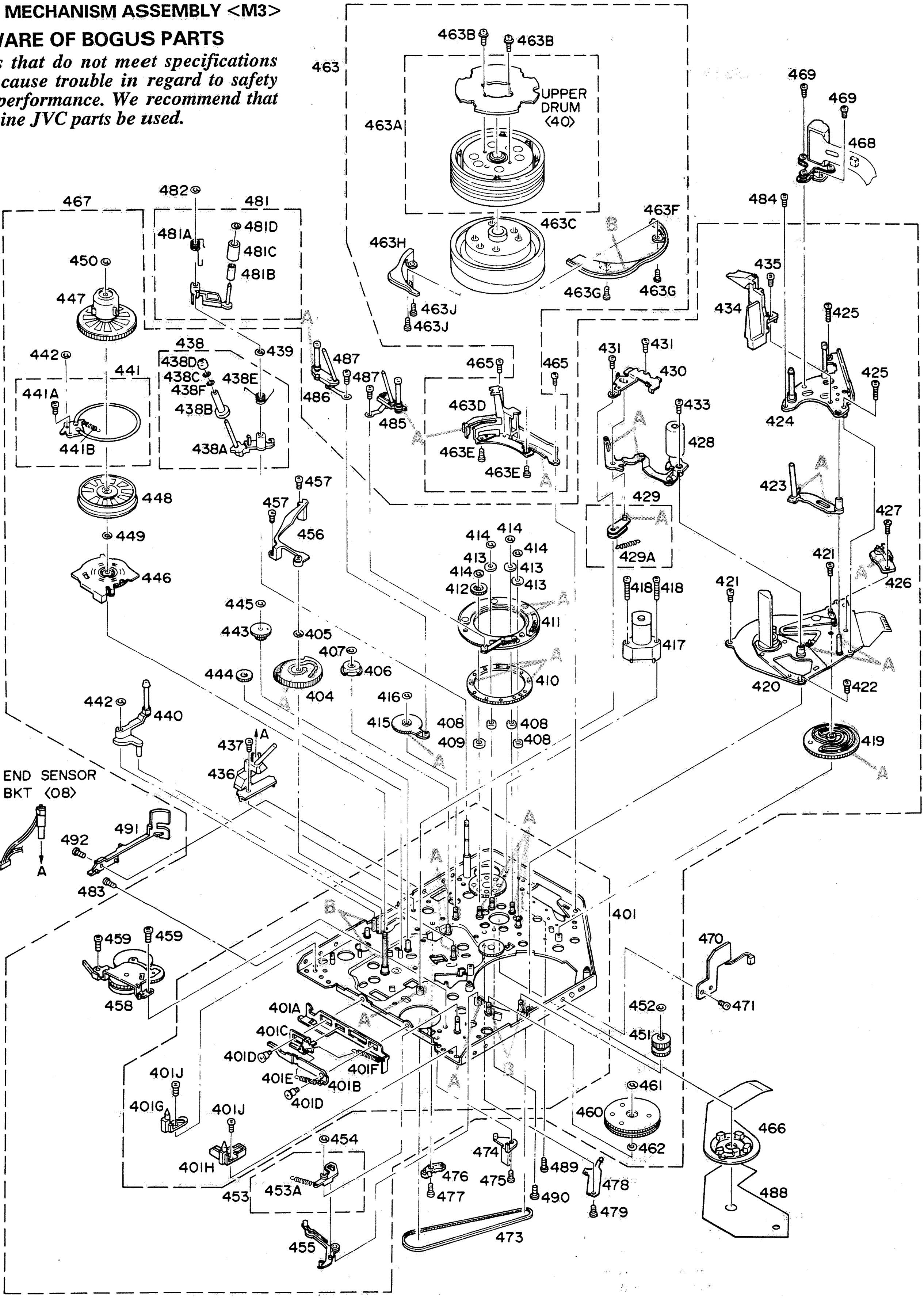
- ELECTRONIC VIEWFINDER SECTION -

	301	YQ31639-1-2	HOLDER(LCD)
	302	YQ43455-1-1	WINDOW(LCD)
	303	PEDP0142	LCD PANEL
	304	YQ43760	DAMPER(LAMP)
⚠	305	YQ31656B	TOP CASE ASSY
⚠	306	YQ31647B	BOTTOM CASE ASSY
	307	YQ20756	EYE PIECE ASSY
	307A	YQ20756-03	EYE CUP
	309	SPSF1760D	T.SCREW,X2
	310	YQ43460	CAP
	311	PEWR0731	FPC
	312	YS20766B	E.VF ASSY

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



463
463B
463B
463A
UPPER DRUM <40>
463C
463F
463H
463G
463G
463J
463J
469
469
468
484
467
482
481
481A
481D
481C
481B
450
447
442
441
441A
441B
438
438D
438C
438E
438F
438B
438A
439
487
487
486
485
465
465
463D
463E
463E
431
431
430
433
428
435
434
425
425
424
423
427
426
421
421
422
420
419
448
449
446
457
457
456
414
414
414
413
414
413
413
412
411
410
429
429A
418
418
417
445
443
405
407
406
444
404
416
415
408
409
408
408
442
440
437
436
END SENSOR BKT <08>
491
492
483
401
470
471
459
459
458
401A
401C
401D
401E
401F
401B
401D
401J
401G
401J
401H
452
451
461
460
462
466
454
453
453A
455
474
476
477
475
489
490
478
479
473
488
A
B

Classifi-cation	Name	Part No.	Symbol in drawing
Grease	Moriton Grease No. 1	MOS2-C	A
Oil	Cosmo Hydro HV100	YTU94027	B

Note: The section marked in A and B indicate lubrication and greasing areas.

****

MECHANISM ASSEMBLY <M3>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	401	YQ10498B	MAIN DECK ASSY
	401A	YQ31349-3	LOCK PLATE
	401B	YQ42757-3	CANCEL PLATE
	401C	YQ42914-2	LIMIT PLATE
	401D	YQ42375-2	SPECIAL SCREW,X2
	401E	YQ42866-3-1	TENSION SPRING
	401F	YQ42866-2	TENSION SPRING
	401G	YQ42377-1-5	GUIDE PIN
	401H	YQ31465	GUIDE PIN
	401J	SPSH1735M	SCREW,X2
	404	YQ20694	CTL CAM GEAR
	405	PQM30017-25	SLIT WASHER
	406	YQ42234-1-4	LOADING GEAR 2
	407	PQM30017-27	SLIT WASHER
	408	YQ42141	LOADING GUIDE,X3
	409	YQ42140	LOADING GUIDE 2
	410	YQ42378-1-4	DRIVE GEAR
	411	YQ42916A-5	LOADING RING ASSY
	412	YQ42920	SUPPLY MIDDLE GEAR
	413	YQ41904-1-1	L.WASHER,X3
	414	PQM30017-27	SLIT WASHER,X4
	415	YQ42921A	SUPPLY LINK GEAR ASSY
	416	PQM30017-27	SLIT WASHER
⚠	417	YU41971-2	MOD CTL MOTOR
	418	SPSH1710M	SCREW,X2
	419	YQ31332	MIDDLE POLE CAM GEAR
⚠	420	YU41963	CAPSTAN MOTOR
	421	SPSH1725M	SCREW,X2
	422	SPSH1730M	MINI SCREW
	423	YQ42876A-4	MIDDLE POLE ARM ASSY
	424	YQ43376A	SUB DECK ASSY
	425	SPSH1760M	SCREW,X2
	426	YQ31331	MIDDLE POLE CATCHER
	427	SSSH1730M	SCREW
	428	YQ31350A-2	PINCH ROLLER ARM ASSY
	429	YQ42927A-2	SPRING PLATE ASSY
	429A	YQ41551-1-3	TENSION SPRING
	430	YQ41553-1-9	GUIDE PLATE
	431	SPSH1425M	SCREW,X2
	433	YQM30032-21	SPECIAL SCREW,M1.7X3
	434	YQ31330	CASSETTE BLOCK
	435	SPSH1730M	MINI SCREW
	436	YQ42928A-2	SUPPLY SLANT POLE ASSY
	437	SPSH1735M	SCREW
	438	YQ43753A	IMPEDANCE ROLLER ARM ASSY
	438A	YQ43752A	IMPEDANCE ROLLER ARM SUB ASSY
	438B	YQ43472A	IMPEDANCE ROLLER ASSY
	438C	YQ43509	SLIT WASHER
	438D	YQ43469	CAP
	438E	YQ42413	TORSION SPRING
	438F	YQ43510	P.S.WASHER
	439	PQM30017-25	SLIT WASHER
	440	YQ43377A	TENSION ARM ASSY
	441	YQ42423A-1	BAND ARM ASSY
	441A	YQM30032-46	SPECIAL SCREW,M1.4X3.5
	441B	YQ42429-1-2	TENSION SPRING
	442	PQM30017-27	SLIT WASHER,X2
	443	YQ43435	ENCODER GEAR(1)
	444	YQ41560	ENCODER GEAR(2)
	445	PQM30017-27	SLIT WASHER
	446	YU41407-1-3	CAM SW ASSY
	447	YQ42485A-3	SUPPLY REEL DISC ASSY
	448	YQ42487A-1	BAND REEL ASSY
	449	Q03093-835	WASHER
	450	PQM30017-27	SLIT WASHER
	451	YQ42773-2	TAKE-UP GERA
	452	PQM30017-27	SLIT WASHER
	453	YQ41628A	SEARCH BRAKE SUB ASSY
	453A	YQ41551-2	TENSION SPRING
	454	PQM30017-27	SLIT WASHER
	455	YQ31353	BRAKE DRIVE LEVER
	456	YDM2062-2-4	SUPPLY GUIDE RAIL
	457	SPSH1735M	SCREW,X2
	458	YQ43033A-6	CLUTCH UNIT
	459	SPSH1725M	SCREW,X2
	460	YQ42602A	TAKE-UP CLUTCH ASSY
	461	PQM30017-27	SLIT WASHER
	462	Q03093-835	WASHER
	463	YDV2064A	DRUM ASSY
	463A	YDM2069A	UPPER DRUM ASSY
	463B	YDM4031	SCREW,X2
	463C	YDM2072B	LOWER DRUM ASSY
	463D	YDM2056-1-8	UV BASE
	463E	YQ42886	SPECIAL SCREW,X2
	463F	YDM2063-1-7	TAKE-UP GUIDE RAIL
	463G	SPSH1725M	SCREW,X2
	463H	YDM2062	SUPPLY GUIDE RAIL
	463J	SPSH1725M	SCREW,X2
	465	YQ42886	SPECIAL SCREW,X2
	466	YQ43090A	RING CONNECTOR ASSY
	467	YMA0015A	MECHA(A) ASSY
	468	YQ42895B	A/C HEAD FINAL ASSY
	469	SPSK1720M	MINI SCREW,X2 AC HEAD
	470	YU41958-1-2	DEW SENSOR
	471	SPSK1720M	MINI SCREW,DEW SENSOR
	473	YQ41558	TIMING BELT
	474	YQ31592	PWB HOLDER
	475	SPSH1725M	SCREW,PWB HOLDER
	476	YQ31058-1-1	LED GUIDE
	477	SPSH1725M	SCREW,LED GUIDE
	478	YU42036-1-1	BRUSH
	479	SPSH1730M	MINI SCREW
	481	YQ42414A-4	HEAD CLEANER ASSY
	481A	YQ42417-1-1	TORSION SPRING
	481B	YQ42418	ROLLER
	481C	YQ42419-2	CLEANER
	481D	YQM30017-8	SLIT WASHER
	482	PQM30017-25	SLIT WASHER
	483	YQ42842	SPECIAL SCREW
	484	SPSK1720M	MINI SCREW
	485	YQ42881A-5	TAKE-UP POLE BASE ASSY
	486	YQ42787A-5	SUPPLY POLE BASE ASSY
	487	YQ42931	SPECIAL SCREW,X2
	488	YU41965	SHIELD PLATE
	489	SPSN1740Z	SCREW
	490	SPSH1730M	MINI SCREW
	491	YQ31356-1-2	WIRE HOLDER
	492	SPSH1735M	SCREW

5.4 ELECTRICAL PARTS LIST

****

MAIN BOARD ASSEMBLY <01>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA1	YB10121B1	MAIN BOARD ASSY
	IC1	ATT78148AGF-A02	IC
	IC2	S-80726AN-DP-X	IC
	IC4	XRU4584BF	IC
	IC5	S-8423EFT-X	IC
	IC6	TC7S08F	IC
	IC7	BA6287F	IC
	IC8	TC7S08F	IC
	IC10	TA75W01FU	IC
	IC11	UPD78063GC-504	IC
	IC12	UPD6461GS-619-X	IC
	IC13	TC7S66F	IC
	IC251	BA6405F	IC
	IC252	AN1393S	IC
		or BA10393F	IC
		or XRA10393F	IC
	IC301	VC5035-XE	IC
	IC351	BA6860FS	IC
	IC401	JCY0040	IC
	IC501	JCP0054	IC
	IC502	M52363VP	IC
	IC503	AN3396S	IC
	IC504	JCY0030-XE	IC
	IC505	TL8840F	IC
	IC506	MM1166XF	IC
	IC507	MM1117XF	IC
	IC508	MM1024AF	IC
	IC509	TC7WU04FU	IC
	IC510	M62354GP	IC
	IC511	M62353GP	IC
	IC512	TL8838F	IC
	IC601	AN3352FHP	IC
	Q1	DTA114YU	TRANSISTOR
	Q2	DTC144EU	TRANSISTOR
	Q3	DTC144EE	TRANSISTOR
	Q4	DTC144EE	TRANSISTOR
	Q8	DTC144EE	TRANSISTOR
	Q11	DTC144EE	TRANSISTOR
	Q12	DTA114EE	TRANSISTOR
	Q50	DTA114EE	TRANSISTOR
	Q51	DTA144EE	TRANSISTOR
	Q52	DTC144EE	TRANSISTOR
	Q201	2SC4617(RS)	TRANSISTOR
	Q202	2SA1774(RS)	TRANSISTOR
	Q351	MDC02	TRANSISTOR
	Q401	DTA143EE	TRANSISTOR
	Q402	DTA143EE	TRANSISTOR
	Q403	2SC4097(QR)	TRANSISTOR
	Q404	DTA124EE	TRANSISTOR
	Q405	DTC124EE	TRANSISTOR
	Q406	UMW1	TRANSISTOR
	Q407	DTC124EE	TRANSISTOR
	Q408	DTC124EE	TRANSISTOR
	Q409	DTC124EE	TRANSISTOR
	Q410	DTC124EE	TRANSISTOR
	Q412	DTC124EE	TRANSISTOR
	Q413	2SC4617(QRS)	TRANSISTOR
	Q414	2SC4617(QRS)	TRANSISTOR
	Q451	UMW1	TRANSISTOR
	Q452	2SA1774(QRS)	TRANSISTOR
	Q453	2SC4617(QRS)	TRANSISTOR
	Q454	2SC4617(QRS)	TRANSISTOR
	Q455	DTC143EE	TRANSISTOR
	Q502	UMX2	TRANSISTOR
	Q503	2SA1577(QR)	TRANSISTOR
	Q504	UMW1	TRANSISTOR
	Q505	2SA1774(QRS)	TRANSISTOR
	Q506	2SC4617(QRS)	TRANSISTOR
	Q507	DTC144EE	TRANSISTOR
	Q508	2SC4617(QRS)	TRANSISTOR
	Q509	2SA1774(QRS)	TRANSISTOR
	Q510	2SC4617(QRS)	TRANSISTOR
	Q511	UMG2	TRANSISTOR
	Q512	DTC144EE	TRANSISTOR
	Q513	2SC4617(QRS)	TRANSISTOR
	Q514	DTC144EE	TRANSISTOR
	Q515	2SA1774(QRS)	TRANSISTOR
	Q516	2SC4617(QRS)	TRANSISTOR
	Q517	2SC4617(QRS)	TRANSISTOR
	Q518	2SC4617(QRS)	TRANSISTOR
	Q519	2SC4617(QRS)	TRANSISTOR
	Q521	UMW1	TRANSISTOR
	Q522	UMB2	TRANSISTOR
	Q523	UMB2	TRANSISTOR
	Q524	2SA1774(QRS)	TRANSISTOR
	Q525	UMG2	TRANSISTOR
	Q526	DTC144EE	TRANSISTOR
	Q530	UMZ1	TRANSISTOR
	Q532	UMZ1	TRANSISTOR
	Q533	2SA1774(QRS)	TRANSISTOR
	Q537	DTA144EE	TRANSISTOR
	Q538	DTC144EE	TRANSISTOR
	Q539	DTC124EE	TRANSISTOR
	Q540	2SA1774(QRS)	TRANSISTOR
	Q601	DTC144EE	TRANSISTOR
⚠	Q603	2SA1577(QR)	TRANSISTOR
⚠	Q604	2SA1577(QR)	TRANSISTOR
	Q605	UMG2	TRANSISTOR
	Q606	XN4504	TRANSISTOR
	Q609	2SD2114K(UV)	TRANSISTOR
	Q610	2SD2114K(UV)	TRANSISTOR
	Q611	2SD2114K(UV)	TRANSISTOR
	Q613	XN4504	TRANSISTOR
	Q615	2SD2114K(UV)	TRANSISTOR
	Q616	2SA1577(QR)	TRANSISTOR
	Q617	DTC144EE	TRANSISTOR
	Q618	DTC144EE	TRANSISTOR
	Q701	2SA1577(RS)	TRANSISTOR
	Q702	2SC4081(R)	TRANSISTOR
	Q703	2SC4081(R)	TRANSISTOR
	Q704	2SC4081(R)	TRANSISTOR
⚠	D4	MA704	DIODE
	D6	SB05-03Q-X	DIODE
	D7	SIM-125ST	CHIP LED
	D8	RD6.8M(B1)	ZENER DIODE
	D17	DAP222	DIODE
	D18	DAP222	DIODE
	D19	DAN222	DIODE
	D21	DAP222	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D22	DAP222	DIODE	
	D23	DAP222	DIODE	
	D24	DAP222	DIODE	
	D252	DAN222	DIODE	
	D301	MA132WK	DIODE	
	D451	DAN222	DIODE	
	D452	DA221	DIODE	
	D503	DAN222	DIODE	
	D504	DAP222	DIODE	
	D601	MA132WA	DIODE	
	D602	MA132WA	DIODE	
	D603	DAN222	DIODE	
	R1	NRSA63J-334N	RESISTOR	330kΩ,1/16W
	R2	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R3	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R4	QRSA08J-1R2YN	RESISTOR	1.2Ω,1/10W
⚠	R5	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R8	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R9	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R11	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R13	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R14	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R15	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R16	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R17	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R18	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R20	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R21	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R22	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R23	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R24	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R32	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R38	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R39	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R45	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R46	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R48	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R49	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R53	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R55	NRSA63J-124N	RESISTOR	120kΩ,1/16W
	R58	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R59	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R60	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R61	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R63	NRVA62D-274N	RESISTOR	270kΩ,1/16W
	R64	NRVA62D-274N	RESISTOR	270kΩ,1/16W
	R65	NRVA62D-274N	RESISTOR	270kΩ,1/16W
	R72	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R74	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R76	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R77	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R88	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R91	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R92	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R93	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R142	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R144	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R145	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R147	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R149	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R153	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R154	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R155	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R158	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R161	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R162	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R163	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R166	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R167	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R168	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R169	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R170	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R171	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R172	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R173	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R174	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R175	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R176	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R178	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R180	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R181	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R182	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R183	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R201	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R204	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R207	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R213	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R215	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R220	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R221	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R222	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R223	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R224	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R251	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R252	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R253	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R254	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R255	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R256	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R258	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R261	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R265	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R266	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R267	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R268	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R269	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R270	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R271	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R272	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R273	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R274	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R275	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R301	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
	R302	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
	R303	NRSA63J-2R2N	RESISTOR	2.2Ω,1/16W
	R304	NRSA63J-121N	RESISTOR	120Ω,1/16W
	R305	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R306	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R307	NRSA63J-154N	RESISTOR	150kΩ,1/16W
	R308	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R309	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R310	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R311	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R312	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R313	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R314	YU41353-R68N	RESISTOR	0.68Ω,1/2W
	R351	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R352	NRSA63J-474N	RESISTOR	470kΩ,1/16W
	R353	NRSA63J-124N	RESISTOR	120kΩ,1/16W
	R354	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R355	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R356	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R357	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R358	NRSA63J-133N	RESISTOR	13kΩ,1/16W
	R359	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R360	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R361	YU41353-R68N	RESISTOR	0.68Ω,1/2W
	R401	NRVA63D-392N	MF RESISTOR	3.9kΩ,1/16W
	R403	NRVA63D-562N	MF RESISTOR	5.6kΩ,1/16W
	R404	NRVA63D-152N	MF RESESTOR	1.5kΩ,1/16W
	R405	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R406	NRSA63J-3R3N	RESISTOR	3.3Ω,1/16W
	R409	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R410	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R411	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R412	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R413	NRSA63J-100N	RESISTOR	10Ω,1/16W
	R414	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R415	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R416	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R418	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R419	NRSA63J-274N	RESISTOR	270kΩ,1/16W
	R420	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R421	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R422	NRSA63J-470N	RESISTOR	47Ω,1/16W
	R424	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R425	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R426	NRVA63D-152N	MF RESESTOR	1.5kΩ,1/16W
	R427	NRVA63D-822N	MF RESISTOR	8.2kΩ,1/16W
	R428	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R429	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R430	NRSA63J-683N	RESISTOR	68kΩ,1/16W
	R431	NRSA63J-393N	RESISTOR	39kΩ,1/16W
	R432	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R451	NRVA63D-123N	MF RESISTOR	12kΩ,1/16W
	R452	NRVA63D-153N	MF RESISTOR	15kΩ,1/16W
	R453	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R454	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R455	NRSA63J-394N	RESISTOR	390kΩ,1/16W
	R456	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R459	NRSA63J-394N	RESISTOR	390kΩ,1/16W
	R460	NRSA63J-511N	RESISTOR	510Ω,1/16W
	R461	NRSA63J-511N	RESISTOR	510Ω,1/16W
	R462	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R463	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R464	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R465	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R466	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R467	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R469	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R470	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R475	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R476	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R477	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R478	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R479	NRSA63J-124N	RESISTOR	120kΩ,1/16W
	R480	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R481	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R486	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R490	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R491	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R492	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R493	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R494	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R495	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R496	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R497	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R498	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R501	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R502	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R503	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R504	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R506	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R507	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R508	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R509	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R510	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R511	NRSA63J-473N	RESISTOR	47kΩ,1/16W
	R512	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R513	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R515	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R516	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R517	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R518	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R519	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R520	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R521	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R522	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R523	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R524	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R525	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R527	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R528	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
	R529	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R530	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R531	NRSA63J-391N	RESISTOR	390Ω,1/16W
	R532	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R533	NRSA63J-181N	RESISTOR	180Ω,1/16W
	R535	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R536	NRSA63J-223N	RESISTOR	22kΩ,1/16W
	R537	NRSA63J-333N	RESISTOR	33kΩ,1/16W
	R539	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R540	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R541	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R542	NRSA63J-183N	RESISTOR	18kΩ,1/16W
	R543	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R545	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
	R546	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R547	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R548	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R549	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R550	NRSA63J-392N	RESISTOR	3.9kΩ,1/16W
	R551	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
	R552	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
	R553	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
	R554	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R555	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R556	NRSA63J-0R0N	RESISTOR	0Ω,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R557	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R558	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R559	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R560	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R561	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R562	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R563	NRSA63J-471N	RESISTOR	470Ω,1/16W
R564	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R565	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R566	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R567	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R568	NRSA63J-512N	RESISTOR	5.1kΩ,1/16W
R569	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R570	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R571	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R572	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R574	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R575	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R576	NRSA63J-471N	RESISTOR	470Ω,1/16W
R577	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R580	NRSA63J-821N	RESISTOR	820Ω,1/16W
R581	NRSA63J-561N	RESISTOR	560Ω,1/16W
R582	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R583	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R585	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R586	NRSA63J-151N	RESISTOR	150Ω,1/16W
R587	NRSA63J-561N	RESISTOR	560Ω,1/16W
R588	NRSA63J-471N	RESISTOR	470Ω,1/16W
R589	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R592	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R593	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R594	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R595	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R596	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R597	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R598	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R599	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R601	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R602	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R603	NRSA63J-221N	RESISTOR	220Ω,1/16W
R604	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R605	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R607	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R609	NRSA63J-221N	RESISTOR	220Ω,1/16W
R610	NRSA63J-511N	RESISTOR	510Ω,1/16W
R611	NRSA63J-100N	RESISTOR	10Ω,1/16W
R612	NRSA63J-100N	RESISTOR	10Ω,1/16W
R613	NRSA63J-100N	RESISTOR	10Ω,1/16W
R614	NRSA63J-100N	RESISTOR	10Ω,1/16W
R615	NRSA63J-511N	RESISTOR	510Ω,1/16W
R616	NRSA63J-511N	RESISTOR	510Ω,1/16W
R617	NRSA63J-511N	RESISTOR	510Ω,1/16W
R618	NRSA63J-221N	RESISTOR	220Ω,1/16W
R619	NRSA63J-561N	RESISTOR	560Ω,1/16W
R620	NRSA63J-561N	RESISTOR	560Ω,1/16W
R621	NRSA63J-100N	RESISTOR	10Ω,1/16W
R622	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R623	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R624	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R626	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R628	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R630	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R631	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R633	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R634	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R661	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R662	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R663	NRSA63J-683N	RESISTOR	68kΩ,1/16W
R664	NRSA63J-121N	RESISTOR	120Ω,1/16W
R668	NRSA63J-151N	RESISTOR	150Ω,1/16W
R669	NRSA63J-225N	RESISTOR	2.2MΩ,1/16W
R675	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R676	NRSA63J-561N	RESISTOR	560Ω,1/16W
R677	NRSA63J-151N	RESISTOR	150Ω,1/16W
R678	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R701	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R702	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R703	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R704	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R705	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R706	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R707	NRSA63J-5R6N	RESISTOR	5.6Ω,1/16W
R708	NRSA63J-5R6N	RESISTOR	5.6Ω,1/16W
R721	NRSA63J-123N	RESISTOR	12kΩ,1/16W
R722	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R723	NRSA63J-123N	RESISTOR	12kΩ,1/16W
R724	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R725	NRSA63J-225N	RESISTOR	2.2MΩ,1/16W
R726	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R727	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R728	NRSA63J-184N	RESISTOR	180kΩ,1/16W
R729	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R730	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R731	NRSA63J-681N	RESISTOR	680Ω,1/16W
R732	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R735	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R736	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R737	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R738	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R739	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R740	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R742	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R743	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R744	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R745	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R746	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R747	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R748	NRSA63J-101N	RESISTOR	100Ω,1/16W
R750	NRSA63J-151N	RESISTOR	150Ω,1/16W
R751	NRSA63J-622N	RESISTOR	6.2kΩ,1/16W
R753	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R754	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R755	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R756	NRSA63J-471N	RESISTOR	470Ω,1/16W
R757	NRSA63J-681N	RESISTOR	680Ω,1/16W
R758	NRSA63J-431N	RESISTOR	430Ω,1/16W
R759	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R761	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R763	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R764	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R765	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R766	NRSA63J-392N	RESISTOR	3.9kΩ,1/16W
R767	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R768	NRSA63J-0R0N	RESISTOR	0Ω,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R770	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R771	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R772	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R779	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R780	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R781	NRSA63J-151N	RESISTOR	150Ω,1/16W
R782	NRSA63J-471N	RESISTOR	470Ω,1/16W
R783	NRSA63J-561N	RESISTOR	560Ω,1/16W
R784	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R785	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R786	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R787	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R788	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
R789	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R791	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R792	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R793	NRSA63J-152N	RESISTOR	1.5kΩ,1/16W
R794	NRSA63J-471N	RESISTOR	470Ω,1/16W
R795	NRSA63J-511N	RESISTOR	510Ω,1/16W
R796	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R797	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R798	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R799	NRSA63J-125N	RESISTOR	1.2MΩ,1/16W
RA1	PERE0560-102JY	NETWORK RESISTOR	1kΩ,1/16W
RA2	PERE0560-105JY	NETWORK RESISTOR	1MΩ,1/16W
RA3	PERE0532-473JY	NETWORK RESISTOR	47kΩ,1/16W
RA4	PERE0557-104JY	NETWORK RESISTOR	100kΩ,1/16W
RA141	PERE0532-103JY	NETWORK RESISTOR	10kΩ,1/16W
RA142	PERE0532-473JY	NETWORK RESISTOR	47kΩ,1/16W
RA201	PERE0560-332JY	NETWORK RESISTOR	3.3kΩ,1/16W
RA202	PERE0532-222JY	NETWORK RESISTOR	2.2kΩ,1/16W
RA203	PERE0532-332JY	NETWORK RESISTOR	3.3kΩ,1/16W
C1	YU40688-336N	E CAPACITOR	33µF,10V
C2	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C3	YU40688-336N	E CAPACITOR	33µF,10V
C4	YU40688-476N	E CAPACITOR	47µF,5.5V
C5	QCYA1EK-104	CAPACITOR	0.1µF,25V
C6	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C7	NCT06CH-270A	CAPACITOR	27pF,50V
C8	NCT06CH-270A	CAPACITOR	27pF,50V
C9	NCB31EK-103A	CAPACITOR	0.01µF,25V
C10	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C11	NCB31EK-103A	CAPACITOR	0.01µF,25V
C12	NCB31EK-103A	CAPACITOR	0.01µF,25V
C15	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C19	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C22	NCB31HK-222A	CAPACITOR	0.0022µF,50V
C27	NCS31HJ-101A	CAPACITOR	100pF,50V
C28	NCS31HJ-101A	CAPACITOR	100pF,50V
C29	NCS31HJ-101A	CAPACITOR	100pF,50V
C30	NCS31HJ-101A	CAPACITOR	100pF,50V
C32	NCS31HJ-101A	CAPACITOR	100pF,50V
C33	NCS31HJ-101A	CAPACITOR	100pF,50V
C34	NCB31EK-103A	CAPACITOR	0.01µF,25V
C35	NCB31CK-473A	CAPACITOR	0.047µF,16V
C38	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C42	NCS31HJ-101A	CAPACITOR	100pF,50V
C43	NCS31HJ-101A	CAPACITOR	100pF,50V
C44	NCS31HJ-101A	CAPACITOR	100pF,50V
C45	NCB31EK-103A	CAPACITOR	0.01µF,25V
C46	NCB31EK-103A	CAPACITOR	0.01µF,25V
C64	NEE21AM-335RY	E CAPACITOR	3.3µF,10V
C67	NCS31HJ-101A	CAPACITOR	100pF,50V
C101	NCB31EK-103A	CAPACITOR	0.01µF,25V
C102	NCB31EK-103A	CAPACITOR	0.01µF,25V
C104	NCT06CH-100A	CAPACITOR	10pF,50V
C105	NCT06CH-121A	CAPACITOR	120pF,50V
C106	NCT06CH-151A	CAPACITOR	150pF,50V
C107	NCB31EK-103A	CAPACITOR	0.01µF,25V
C108	YU42058-A336Z	E CAPACITOR	33µF,10V
C109	NCT06CH-200A	CAPACITOR	20pF,50V
C110	NCT06CH-200A	CAPACITOR	20pF,50V
C111	NCB31EK-103A	CAPACITOR	0.01µF,25V
C112	YU42058-H476Z	E CAPACITOR	47µF,5.5V
C115	NCB31EK-103A	CAPACITOR	0.01µF,25V
C116	NCB31EK-103A	CAPACITOR	0.01µF,25V
C202	NCB31EK-822A	CAPACITOR	0.0082µF,25V
C204	NCB31EK-822A	CAPACITOR	0.0082µF,25V
C205	QCYA1EK-104	CAPACITOR	0.1µF,25V
C206	QCYA1EK-104	CAPACITOR	0.1µF,25V
C207	NCB31CK-333A	CAPACITOR	0.033µF,16V
C208	NCB31CK-333A	CAPACITOR	0.033µF,16V
C210	NEE21AM-106RY	E CAPACITOR	10µF,10V
C211	NCT06CH-101A	CAPACITOR	100pF,50V
C251	NCB31HK-102A	CAPACITOR	0.001µF,50V
C252	NEE21CM-105RY	E CAPACITOR	1µF,16V
C253	NEA20GM-336NZ	E CAPACITOR	33µF,4.0V
C254	NCT06CH-101A	CAPACITOR	100pF,50V
C255	QCYA1HK-103	CAPACITOR	0.01µF,50V
C256	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C257	NEA20JM-107NP	E CAPACITOR	100µF,6.3V
C259	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C260	NCB31EK-103A	CAPACITOR	0.01µF,25V
C261	QCFA1CZ-105	CAPACITOR	1µF,16V
C262	QCFA1CZ-105	CAPACITOR	1µF,16V
C263	QCFA1CZ-105	CAPACITOR	1µF,16V
C266	NEE21EM-474RY	E CAPACITOR	0.47µF,25V
C301	QCF81CZ-225	CAPACITOR	2.2µF,16V
C302	QCF81CZ-225	CAPACITOR	2.2µF,16V
C303	QCF81CZ-225	CAPACITOR	2.2µF,16V
C304	NEE21CM-105RY	E CAPACITOR	1µF,16V
C305	NCB31HK-681A	CAPACITOR	680pF,50V
C306	QCYA1HK-103	CAPACITOR	0.01µF,50V
C307	NEE21EM-474RY	E CAPACITOR	0.47µF,25V
C308	NCB31HK-331A	CAPACITOR	330pF,50V
C309	QCYA1EK-104	CAPACITOR	0.1µF,25V
C312	NCB31HK-332A	CAPACITOR	0.0033µF,50V
C313	QCYA1CK-473	CAPACITOR	0.047µF,16V
C314	NCB31EK-103A	CAPACITOR	0.01µF,25V
C315	QCYA1EK-104	CAPACITOR	0.1µF,25V
C316	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C351	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C352	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C353	QCFA1EZ-224	CAPACITOR	0.22µF,25V
C354	NCB31EK-223A	CAPACITOR	0.022µF,25V
C355	NCB31EK-223A	CAPACITOR	0.022µF,25V
C356	NCB31EK-223A	CAPACITOR	0.022µF,25V
C357	QCFA1EZ-104	CAPACITOR	0.1µF,25V
C358	QCYA1EK-473	CAPACITOR	0.047µF,25V
C359	QCYA1EK-473	CAPACITOR	0.047µF,25V
C360	QCFA1EZ-104	CAPACITOR	0.1µF,25V
C362	NEA21CM-106N	E CAPACITOR	10µF,16V
C401	NCT06CH-331A	CAPACITOR	330pF,50V
C402	NFV41HJ-273AY	F CAPACITOR	0.027µF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C403	NCS31HJ-561A	CAPACITOR	560pF,50V
C404	NCB31EK-822A	CAPACITOR	0.0082μF,25V
C405	YU41970-A226XW	T CAPACITOR	0.00A2μF
C407	YU40688-336N	E CAPACITOR	33μF,10V
C408	QCYA1EK-683	CAPACITOR	0.068μF,25V
C409	NCB31HK-682A	CAPACITOR	0.0068μF,50V
C410	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C411	NEE21CM-105RY	E CAPACITOR	1μF,16V
C412	NCS31HJ-681A	CAPACITOR	680pF,50V
C413	NCB31HK-392A	CAPACITOR	0.0039μF,50V
C415	NCB31HK-392A	CAPACITOR	0.0039μF,50V
C416	NCB31HK-392A	CAPACITOR	0.0039μF,50V
C417	NCB31EK-103A	CAPACITOR	0.01μF,25V
C418	NCB31EK-223A	CAPACITOR	0.022μF,25V
C420	QCY81CK-105	CAPACITOR	1μF,16V
C421	NCB31EK-223A	CAPACITOR	0.022μF,25V
C422	QCFA1CZ-105	CAPACITOR	1μF,16V
C424	NCS31HJ-101A	CAPACITOR	100pF,50V
C451	YU42058-H476Z	E CAPACITOR	47μF,5.5V
C452	YU42058-H476Z	E CAPACITOR	47μF,5.5V
C453	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C454	YU40688-476N	E CAPACITOR	47μF,5.5V
C455	NCB31EK-103A	CAPACITOR	0.01μF,25V
C456	NCB31EK-103A	CAPACITOR	0.01μF,25V
C457	QCYA1CK-124	CAPACITOR	0.12μF,16V
C458	NCS31HJ-271A	CAPACITOR	270pF,50V
C460	NCB31EK-103A	CAPACITOR	0.01μF,25V
C462	QCYA1EK-104	CAPACITOR	0.1μF,25V
C463	QCYA1EK-104	CAPACITOR	0.1μF,25V
C464	NEE21CM-105RY	E CAPACITOR	1μF,16V
C465	NEE21CM-105RY	E CAPACITOR	1μF,16V
C466	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C467	YU40688-336N	E CAPACITOR	33μF,10V
C468	YU40688-336N	E CAPACITOR	33μF,10V
C469	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C470	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C471	YU40688-476N	E CAPACITOR	47μF,5.5V
C472	YU40688-476N	E CAPACITOR	47μF,5.5V
C473	NCB31EK-103A	CAPACITOR	0.01μF,25V
C474	NCB31EK-103A	CAPACITOR	0.01μF,25V
C476	YU40688-476N	E CAPACITOR	47μF,5.5V
C477	NCB31EK-103A	CAPACITOR	0.01μF,25V
C478	NCB31EK-103A	CAPACITOR	0.01μF,25V
C479	NCB31EK-103A	CAPACITOR	0.01μF,25V
C480	NCB31EK-103A	CAPACITOR	0.01μF,25V
C481	NEE20JM-475RY	E CAPACITOR	4.7μF,6.3V
C482	NEE20JM-475RY	E CAPACITOR	4.7μF,6.3V
C485	YU40688-476N	E CAPACITOR	47μF,5.5V
C486	NEE20JM-475RY	E CAPACITOR	4.7μF,6.3V
C487	NCB31CK-473A	CAPACITOR	0.047μF,16V
C488	NCB31CK-473A	CAPACITOR	0.047μF,16V
C489	NCB31EK-103A	CAPACITOR	0.01μF,25V
C490	NCB31EK-103A	CAPACITOR	0.01μF,25V
C491	NCB31EK-103A	CAPACITOR	0.01μF,25V
C492	QCYA1EK-104	CAPACITOR	0.1μF,25V
C493	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C494	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C501	NCB31EK-103A	CAPACITOR	0.01μF,25V
C502	NCS31HJ-680A	CAPACITOR	68pF,50V
C503	NCS31HJ-220A	CAPACITOR	22pF,50V
C504	NCS31HJ-470A	CAPACITOR	47pF,50V
C505	NCS31HJ-820A	CAPACITOR	82pF,50V
C506	QCFA1CZ-104	CAPACITOR	0.1μF,16V
C507	NCB31CK-273A	CAPACITOR	0.027μF,16V
C509	NCB31EK-103A	CAPACITOR	0.01μF,25V
C510	NCB31EK-103A	CAPACITOR	0.01μF,25V
C511	NCB31EK-103A	CAPACITOR	0.01μF,25V
C512	NCS31HJ-120A	CAPACITOR	12pF,50V
C513	NCS31HJ-101A	CAPACITOR	100pF,50V
C514	NCS31HJ-680A	CAPACITOR	68pF,50V
C515	NCS31HJ-330A	CAPACITOR	33pF,50V
C516	NCB31EK-103A	CAPACITOR	0.01μF,25V
C517	NCB31EK-103A	CAPACITOR	0.01μF,25V
C518	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C519	NCS31HJ-150A	CAPACITOR	15pF,50V
C520	NCB31EK-103A	CAPACITOR	0.01μF,25V
C521	QCYA1HK-102	CAPACITOR	0.001μF,50V
C522	NCS31HJ-121A	CAPACITOR	120pF,50V
C524	NCB31EK-103A	CAPACITOR	0.01μF,25V
C525	NCB31EK-103A	CAPACITOR	0.01μF,25V
C526	QCFA1CZ-104	CAPACITOR	0.1μF,16V
C527	NCB31EK-103A	CAPACITOR	0.01μF,25V
C528	NCB31EK-103A	CAPACITOR	0.01μF,25V
C529	NCB31EK-103A	CAPACITOR	0.01μF,25V
C530	NCB31EK-103A	CAPACITOR	0.01μF,25V
C531	NCS31HJ-680A	CAPACITOR	68pF,50V
C532	NCS31HJ-390A	CAPACITOR	39pF,50V
C533	NCB31EK-103A	CAPACITOR	0.01μF,25V
C534	NCB31EK-103A	CAPACITOR	0.01μF,25V
C535	NCB31EK-103A	CAPACITOR	0.01μF,25V
C536	NCB31EK-103A	CAPACITOR	0.01μF,25V
C537	NCB31EK-103A	CAPACITOR	0.01μF,25V
C538	YU40688-476N	E CAPACITOR	47μF,5.5V
C539	NCB31EK-103A	CAPACITOR	0.01μF,25V
C540	NCB31EK-103A	CAPACITOR	0.01μF,25V
C541	NCB31EK-103A	CAPACITOR	0.01μF,25V
C542	NCB31EK-103A	CAPACITOR	0.01μF,25V
C543	YU40688-476N	E CAPACITOR	47μF,5.5V
C544	NEA21EM-475NZ	E CAPACITOR	4.7μF,25V
C545	NCS31HJ-271A	CAPACITOR	270pF,50V
C546	NCS31HJ-820A	CAPACITOR	82pF,50V
C547	NCS31HJ-221A	CAPACITOR	220pF,50V
C548	NCS31HJ-271A	CAPACITOR	270pF,50V
C549	NCS31HJ-271A	CAPACITOR	270pF,50V
C550	QCFA1CZ-104	CAPACITOR	0.1μF,16V
C551	QCFA1CZ-105	CAPACITOR	1μF,16V
C552	QCFA1CZ-105	CAPACITOR	1μF,16V
C553	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C556	NCS31HJ-220A	CAPACITOR	22pF,50V
C557	NCS31HJ-180A	CAPACITOR	18pF,50V
C558	NCS31HJ-151A	CAPACITOR	150pF,50V
C559	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C560	NCB31EK-103A	CAPACITOR	0.01μF,25V
C561	QCFA1CZ-105	CAPACITOR	1μF,16V
C562	NCB31EK-103A	CAPACITOR	0.01μF,25V
C563	QCYA1HK-472	CAPACITOR	0.0047μF,50V
C564	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C565	QCFA1CZ-105	CAPACITOR	1μF,16V
C566	NCS31HJ-151A	CAPACITOR	150pF,50V
C567	NCS31HJ-331A	CAPACITOR	330pF,50V
C568	NCS31HJ-390A	CAPACITOR	39pF,50V
C569	NCS31HJ-330A	CAPACITOR	33pF,50V
C570	NCS31HJ-220A	CAPACITOR	22pF,50V
C572	NEA21HM-225NZ	E CAPACITOR	2.2μF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C573	NCB31EK-103A	CAPACITOR	0.01µF,25V
C574	NCB31EK-103A	CAPACITOR	0.01µF,25V
C575	NEA20JM-226N	E CAPACITOR	22µF,6.3V
C576	NCB31EK-103A	CAPACITOR	0.01µF,25V
C577	NEA21HM-105NZ	E CAPACITOR	1µF,50V
C578	NEA21HM-225NZ	E CAPACITOR	2.2µF,50V
C579	YU41583-J226MZ	T CAPACITOR	22µF,6.3V
C580	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C581	NCS31HJ-221A	CAPACITOR	220pF,50V
C582	NCB31EK-103A	CAPACITOR	0.01µF,25V
C583	NCB31EK-103A	CAPACITOR	0.01µF,25V
C584	NCB31EK-103A	CAPACITOR	0.01µF,25V
C585	QCFA1CZ-224	CAPACITOR	0.22µF,16V
C586	NEA21HM-105NZ	E CAPACITOR	1µF,50V
C587	QCYA1EK-104	CAPACITOR	0.1µF,25V
C589	NCS31HJ-680A	CAPACITOR	68pF,50V
C591	NEA21CM-106N	E CAPACITOR	10µF,16V
C592	QCYA1EK-104	CAPACITOR	0.1µF,25V
C593	NEA21HM-225NZ	E CAPACITOR	2.2µF,50V
C595	QCYA1EK-104	CAPACITOR	0.1µF,25V
C596	NEA21EM-475NZ	E CAPACITOR	4.7µF,25V
C597	NEA21HM-474NZ	E CAPACITOR	0.47µF,50V
C598	QCYA1EK-153	CAPACITOR	0.015µF,25V
C601	QCYA1HK-223	CAPACITOR	0.022µF,50V
C602	QCFA1CZ-104	CAPACITOR	0.1µF,16V
C603	NCB31EK-103A	CAPACITOR	0.01µF,25V
C604	QCYA1EK-683	CAPACITOR	0.068µF,25V
C605	NCS31HJ-470A	CAPACITOR	47pF,50V
C606	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C607	NCB31EK-103A	CAPACITOR	0.01µF,25V
C608	QCFA1CZ-105	CAPACITOR	1µF,16V
C609	NCB31EK-103A	CAPACITOR	0.01µF,25V
C610	QCFA1CZ-105	CAPACITOR	1µF,16V
C611	NCB31EK-103A	CAPACITOR	0.01µF,25V
C612	QCFA1CZ-105	CAPACITOR	1µF,16V
C615	NCB31EK-103A	CAPACITOR	0.01µF,25V
C616	NCB31EK-103A	CAPACITOR	0.01µF,25V
C617	QCFA1CZ-105	CAPACITOR	1µF,16V
C618	QCFA1CZ-105	CAPACITOR	1µF,16V
C621	NCB31EK-103A	CAPACITOR	0.01µF,25V
C622	QCFA1CZ-105	CAPACITOR	1µF,16V
C623	QCFA1CZ-105	CAPACITOR	1µF,16V
C624	QCFA1CZ-105	CAPACITOR	1µF,16V
C625	QCFA1CZ-104	CAPACITOR	0.1µF,16V
C626	NCB31EK-103A	CAPACITOR	0.01µF,25V
C627	NCB31EK-103A	CAPACITOR	0.01µF,25V
C628	NCS31HJ-271A	CAPACITOR	270pF,50V
C629	NCB31EK-103A	CAPACITOR	0.01µF,25V
C630	NCS31HJ-271A	CAPACITOR	270pF,50V
C631	NCB31EK-103A	CAPACITOR	0.01µF,25V
C632	NCS31HJ-271A	CAPACITOR	270pF,50V
C633	NCB31EK-103A	CAPACITOR	0.01µF,25V
C634	NCB31EK-103A	CAPACITOR	0.01µF,25V
C635	NCB31EK-103A	CAPACITOR	0.01µF,25V
C636	QEK60JM-107	E CAPACITOR	100µF,6.3V
C637	NCB31EK-103A	CAPACITOR	0.01µF,25V
C638	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C639	QCYA1EK-104	CAPACITOR	0.1µF,25V
C640	QCYA1EK-104	CAPACITOR	0.1µF,25V
C641	NCB31EK-103A	CAPACITOR	0.01µF,25V
C642	NCB31EK-103A	CAPACITOR	0.01µF,25V
C643	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C644	NCB31EK-103A	CAPACITOR	0.01µF,25V
C645	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C646	QCYA1EK-104	CAPACITOR	0.1µF,25V
C647	NCS31HJ-470A	CAPACITOR	47pF,50V
C648	YU41415-J106AW	T CAPACITOR	10µF,6.3V
C649	NCB31EK-103A	CAPACITOR	0.01µF,25V
C650	NCB31EK-103A	CAPACITOR	0.01µF,25V
C651	NCB31EK-103A	CAPACITOR	0.01µF,25V
C652	NCB31EK-103A	CAPACITOR	0.01µF,25V
C653	NCB31EK-103A	CAPACITOR	0.01µF,25V
C654	NCS31HJ-271A	CAPACITOR	270pF,50V
C661	NCS31HJ-331A	CAPACITOR	330pF,50V
C662	NCS31HJ-220A	CAPACITOR	22pF,50V
C701	QCTA1CH-5R0	CAPACITOR	5pF,16V
C702	QCFA1EZ-104	CAPACITOR	0.1µF,25V
C703	QCTA1CH-181	CAPACITOR	180pF,16V
C704	QCTA1CH-181	CAPACITOR	180pF,16V
C705	QCTA1CH-271	CAPACITOR	270pF,16V
C706	QCTA1CH-681	CAPACITOR	680pF,16V
C722	NEA21HM-105NZ	E CAPACITOR	1µF,50V
C723	QCYA1EK-104	CAPACITOR	0.1µF,25V
C724	YU42058-H476Z	E CAPACITOR	47µF,5.5V
C725	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C726	NCB31EK-103A	CAPACITOR	0.01µF,25V
C727	QCYA1EK-104	CAPACITOR	0.1µF,25V
C730	NCB31EK-103A	CAPACITOR	0.01µF,25V
C731	NCB31EK-103A	CAPACITOR	0.01µF,25V
C732	YU42058-H476Z	E CAPACITOR	47µF,5.5V
C733	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C734	NCS31HJ-680A	CAPACITOR	68pF,50V
C735	NCB31EK-103A	CAPACITOR	0.01µF,25V
C736	NCF31CZ-104A	CAPACITOR	0.1µF,16V
C737	QETL0JM-108M	E CAPACITOR	1000µF,6.3V
C738	QCYA1EK-223	CAPACITOR	0.022µF,25V
C739	NCS31HJ-100A	CAPACITOR	10pF,50V
C740	NCS31HJ-151A	CAPACITOR	150pF,50V
C741	NCS31HJ-470A	CAPACITOR	47pF,50V
C743	NCS31HJ-561A	CAPACITOR	560pF,50V
C744	NCS31HJ-270A	CAPACITOR	27pF,50V
C746	NCS31HJ-820A	CAPACITOR	82pF,50V
C747	QCSA1HJ-391	CAPACITOR	390pF,50V
C748	QCFA1CZ-105	CAPACITOR	1µF,16V
C751	NCB31EK-103A	CAPACITOR	0.01µF,25V
C752	NCB31EK-103A	CAPACITOR	0.01µF,25V
C753	NEA21HM-474NZ	E CAPACITOR	0.47µF,50V
C754	QCFA1CZ-474	CAPACITOR	0.47µF,16V
C755	NEA21HM-105NZ	E CAPACITOR	1µF,50V
C756	NEA21HM-105NZ	E CAPACITOR	1µF,50V
C757	NCB31EK-103A	CAPACITOR	0.01µF,25V
C758	NCB31EK-103A	CAPACITOR	0.01µF,25V
C759	NEA21CM-106N	E CAPACITOR	10µF,16V
C760	NEA21CM-106N	E CAPACITOR	10µF,16V
C761	NEA21CM-106N	E CAPACITOR	10µF,16V
C762	QCYA1EK-104	CAPACITOR	0.1µF,25V
C763	NCB31EK-103A	CAPACITOR	0.01µF,25V
C765	QCYA1EK-104	CAPACITOR	0.1µF,25V
C766	NEA21CM-106N	E CAPACITOR	10µF,16V
C768	NCB31EK-103A	CAPACITOR	0.01µF,25V
C769	QCFA1CZ-105	CAPACITOR	1µF,16V
C770	NEA21CM-106N	E CAPACITOR	10µF,16V
C771	NCB31EK-103A	CAPACITOR	0.01µF,25V
C772	NCB31EK-103A	CAPACITOR	0.01µF,25V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C773	QCFA1CZ-105	CAPACITOR	1μF,16V
	C774	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C775	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C776	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C777	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C778	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C779	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C780	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C781	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C782	NEA21CM-106N	E CAPACITOR	10μF,16V
	C783	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C784	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	C785	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C786	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C787	QCFA1CZ-105	CAPACITOR	1μF,16V
	C788	NCS31HJ-391A	CAPACITOR	390pF,50V
	C789	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C790	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	L1	PELN0840-8R2KY	COIL	8.2μH
⚠	L401	PELN0755-P	OSC TRANSFORMER	
	L403	YU40740-470K	COIL	47μH
	L404	YU40740-470K	COIL	47μH
	L451	YU40740-470K	COIL	47μH
	L452	YU40740-470K	COIL	47μH
	L454	YU40740-470K	COIL	47μH
	L501	PU57620-821J	COIL	820μH
	L502	PU57620-102J	COIL	1mH
	L503	YU41134-331J	COIL	330μH
	L505	YU41134-120JY	COIL	12μH
	L506	YU41134-560JY	COIL	56μH
	L507	YU40740-470K	COIL	47μH
	L508	YU41134-220J	COIL	22μH
	L510	YU40740-470K	COIL	47μH
	L511	YU41134-120JY	COIL	12μH
	L512	YU41134-150J	COIL	15μH
	L513	YU40740-470K	COIL	47μH
	L515	YU40740-470K	COIL	47μH
	L516	YU41134-101J	COIL	100μH
	L517	YU41134-120JY	COIL	12μH
	L518	YU41134-3R9KY	COIL	3.9μH
	L519	YU41134-150J	COIL	15μH
	L520	YU40740-470K	COIL	47μH
	L521	YU40740-470K	COIL	47μH
	L522	YU40740-470K	COIL	47μH
	L524	YU41134-820J	COIL	82μH
	L525	YU41134-121J	COIL	120μH
	L526	YU41134-560JY	COIL	56μH
	L530	YU40740-470K	COIL	47μH
	L531	YU40740-470K	COIL	47μH
	L532	YU41134-120JY	COIL	12μH
	L533	YU41134-150J	COIL	15μH
	L601	YU40740-470K	COIL	47μH
	L602	YU40740-470K	COIL	47μH
	L603	YU40740-470K	COIL	47μH
	L604	YU40740-470K	COIL	47μH
	L605	YU40740-470K	COIL	47μH
	L606	YU40740-470K	COIL	47μH
	L701	YU40740-470K	COIL	47μH
	L702	YU41134-1R2MY	COIL	1.2μH
⚠	L703	YU41368	CHIP OSC COIL	
	EQ501	PELN1015-Z	EQUALIZER	
	EQ502	PELN0808-Z	EQUALIZER	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	LC501	PELN1016-Z	LC TRAP
⚠	X1	PEVB0443	CRYSTAL RESONATOR
⚠	X11	PEVB0525-Z	RESONATOR
⚠	X12	YU40141	CRYSTAL RESONATOR
⚠	X501	PEVB0549	CRYSTAL RESONATOR
	SW1	PESW0605-R	PUSH SWITCH
	SLD1	YQ43109	SHIELD SHEET
	SPC1	YQM30029-175-7	SPACER
	CN1	PEMC0859-020-R	CONNECTOR
	CN2	PEMC0987-048-X	CONNECTOR
	CN3	PEMC0880-016-R	CONNECTOR
	CN4	PEMC0855-018-R	CONNECTOR
	CN5	PEMC0855-018-R	CONNECTOR
	CN6	PEMC0880-012-R	CONNECTOR
	CN7	PEMC0855-018-R	CONNECTOR
	CN10	PEMC0855-011-R	CONNECTOR
	CN12	YU41356-8-R	CONNECTOR
	CN13	PEMC0855-013-R	CONNECTOR
	CN14	PEMC0987-010-P	CONNECTOR
	CN15	PEMC0859-030-X	CONNECTOR

****

REAR BOARD ASSEMBLY <02>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	YB10122A1-03	REAR BOARD ASSY	
	IC31	FA7618N-XE	IC	
	IC101	MB3785APFV	IC	
	IC102	PQ05TZ5U	IC	
	IC103	MM1065GM	IC	
	Q31	2SK1467	FE TRANSISTOR	
	Q33	2SK1467	FE TRANSISTOR	
	Q34	2SK1467	FE TRANSISTOR	
	Q35	2SK1467	FE TRANSISTOR	
	Q38	DTC143XU	TRANSISTOR	
		or UN521F	TRANSISTOR	
	Q39	DTA143EU	TRANSISTOR	
		or UN511L	TRANSISTOR	
	Q101	FP103	TRANSISTOR	
	Q102	FP103	TRANSISTOR	
	Q103	FP103	TRANSISTOR	
	Q104	2SB1115(L)	TRANSISTOR	
	Q105	DTA143EU	TRANSISTOR	
		or UN511L	TRANSISTOR	
	Q106	DTC143XU	TRANSISTOR	
		or UN521F	TRANSISTOR	
	Q107	DTA143EU	TRANSISTOR	
		or UN511L	TRANSISTOR	
	Q108	DTC143XU	TRANSISTOR	
		or UN521F	TRANSISTOR	
	D31	SB07-03C-X	SB DIODE	
	D32	SB20-03P-X	SB DIODE	
	D33	SB07-03C-X	SB DIODE	
	D34	SB07-03C-X	SB DIODE	
	D36	MA132WK	DIODE	
	D101	DWA010	SB DIODE	
	D103	DAN202U	DIODE	
	R1	NRD187J-750N	RESISTOR	75Ω,1/8W
	R2	NRD187J-750N	RESISTOR	75Ω,1/8W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R5	NRD187J-750N	RESISTOR	75Ω,1/8W
R31	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R38	NRVA63D-333N	RESISTOR	33kΩ,1/16W
R39	NRVA63D-392N	RESISTOR	3.9kΩ,1/16W
R40	NRVA63D-222N	RESISTOR	2.2kΩ,1/16W
R47	NRVA63D-393N	RESISTOR	39kΩ,1/16W
R48	NRVA63D-392N	RESISTOR	3.9kΩ,1/16W
R49	NRVA63D-823N	RESISTOR	82kΩ,1/16W
R50	NRVA63D-223N	RESISTOR	22kΩ,1/16W
R51	NRSA63J-334N	RESISTOR	330kΩ,1/16W
R52	NRSA63J-511N	RESISTOR	510Ω,1/16W
R53	NRVA63D-363N	RESISTOR	36kΩ,1/16W
R54	NRVA63D-113N	RESISTOR	11kΩ,1/16W
R55	NRSA63J-334N	RESISTOR	330kΩ,1/16W
R56	NRSA63J-511N	RESISTOR	510Ω,1/16W
R57	QRSA08J-100YN	RESISTOR	10Ω,1/10W
R58	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R59	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R60	NRSA63J-471N	RESISTOR	470Ω,1/16W
R101	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R102	NRVA63D-272N	RESISTOR	2.7kΩ,1/16W
R103	NRVA63D-152N	RESISTOR	1.5kΩ,1/16W
R104	NRSA63J-561N	RESISTOR	560Ω,1/16W
R105	NRVA63D-363N	RESISTOR	36kΩ,1/16W
R106	NRVA63D-223N	RESISTOR	22kΩ,1/16W
R107	NRSA63J-121N	RESISTOR	120Ω,1/16W
R109	NRVA63D-821N	RESISTOR	820Ω,1/16W
R110	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R111	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R112	NRVA63D-303N	RESISTOR	30kΩ,1/16W
R113	NRVA63D-242N	RESISTOR	2.4kΩ,1/16W
R114	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R115	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R116	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R117	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R118	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R119	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R120	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R121	NRVA63D-512N	RESISTOR	5.1kΩ,1/16W
R122	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R123	NRSA63J-623N	RESISTOR	62kΩ,1/16W
R124	NRSA63J-274N	RESISTOR	270kΩ,1/16W
R125	NRVA63D-512N	RESISTOR	5.1kΩ,1/16W
R126	NRSA63J-100N	RESISTOR	10Ω,1/16W
R127	NRSA63J-100N	RESISTOR	10Ω,1/16W
R128	NRSA63J-100N	RESISTOR	10Ω,1/16W
R129	NRSA63J-100N	RESISTOR	10Ω,1/16W
R131	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R132	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R136	NRVA63D-391N	RESISTOR	390Ω,1/16W
R137	NRVA63D-242N	RESISTOR	2.4kΩ,1/16W
R138	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R139	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
C1	NCS31HJ-101A	CAPACITOR	100pF,50V
C2	NCS31HJ-101A	CAPACITOR	100pF,50V
C5	QER40GM-477	E CAPACITOR	470μF,4.0V
C6	QER40GM-477	E CAPACITOR	470μF,4.0V
C7	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C31	QCY81CK-105	CAPACITOR	1μF,16V
C32	QCY81CK-105	CAPACITOR	1μF,16V
C34	QCY81CK-105	CAPACITOR	1μF,16V
C35	QCY81CK-105	CAPACITOR	1μF,16V
C36	QCY81CK-105	CAPACITOR	1μF,16V
C37	QCY81CK-105	CAPACITOR	1μF,16V
C38	QCY81CK-224	CAPACITOR	0.22μF,16V
C39	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C40	QCY81CK-224	CAPACITOR	0.22μF,16V
C41	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C42	QCTA1CH-331	CAPACITOR	330pF,16V
C43	QCF81CZ-474	CAPACITOR	0.47μF,16V
C44	PECA0874-225ZY	CAPACITOR	2.2μF,16V
C45	NCB31EK-103A	CAPACITOR	0.01μF,25V
C101	QCY81CK-105	CAPACITOR	1μF,16V
C102	QCY81CK-105	CAPACITOR	1μF,16V
C103	QCY81CK-105	CAPACITOR	1μF,16V
C104	QCY81CK-105	CAPACITOR	1μF,16V
C105	QCTA1CH-561	CAPACITOR	560pF,16V
C106	NCB31HK-102A	CAPACITOR	0.001μF,50V
C107	QCY81CK-105	CAPACITOR	1μF,16V
C108	NCB31HK-102A	CAPACITOR	0.001μF,50V
C109	QCY81CK-105	CAPACITOR	1μF,16V
C110	NCS31HJ-101A	CAPACITOR	100pF,50V
C111	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C112	QCY81CK-105	CAPACITOR	1μF,16V
C113	QCY81CK-105	CAPACITOR	1μF,16V
C114	NCB31HK-331A	CAPACITOR	330pF,50V
C115	QCY81CK-105	CAPACITOR	1μF,16V
C116	NCB31HK-102A	CAPACITOR	0.001μF,50V
C118	QCY81CK-105	CAPACITOR	1μF,16V
C119	QCY81CK-105	CAPACITOR	1μF,16V
C120	QCTA1CH-102	CAPACITOR	0.001μF,16V
C121	QCY81CK-105	CAPACITOR	1μF,16V
C122	NCB31HK-102A	CAPACITOR	0.001μF,50V
C123	NCB31HK-102A	CAPACITOR	0.001μF,50V
C124	QCY81CK-105	CAPACITOR	1μF,16V
C125	QCY81CK-105	CAPACITOR	1μF,16V
C126	QCY81EK-474	CAPACITOR	0.47μF,25V
C127	NCB31HK-102A	CAPACITOR	0.001μF,50V
C128	QCY81EK-474	CAPACITOR	0.47μF,25V
C129	QCYA1EK-104	CAPACITOR	0.1μF,25V
C130	QCYA1EK-104	CAPACITOR	0.1μF,25V
C131	NCB31HK-472A	CAPACITOR	0.0047μF,50V
C132	NCB31HK-472A	CAPACITOR	0.0047μF,50V
C133	NCB31EK-103A	CAPACITOR	0.01μF,25V
C134	NCB31HK-103A	CAPACITOR	0.01μF,50V
C135	QCYA1EK-104	CAPACITOR	0.1μF,25V
C136	QCYA1CK-184	CAPACITOR	0.18μF,16V
C137	NCT06CH-391A	CAPACITOR	390pF,50V
C139	QCYA1EK-104	CAPACITOR	0.1μF,25V
C140	QCYA1EK-104	CAPACITOR	0.1μF,25V
C142	NEE21AM-106RY	E CAPACITOR	10μF,10V
C145	QCFA1CZ-105	CAPACITOR	1μF,16V
C146	QCFA1CZ-105	CAPACITOR	1μF,16V
L31	PELN0790-100MP	COIL	10μH
L32	PELN1017-150MP	COIL	15μH
L33	PELN0325-150KZ	COIL	15μH
L34	PELN0790-270MP	COIL	27μH
L35	PELN0325-150KZ	COIL	15μH
L36	PELN0325-331KZ	COIL	330μH
L101	PELN0790-100MP	COIL	10μH
L102	PELN0790-820MP	COIL	82μH
L103	PELN0325-100KZ	COIL	10μH
L104	PELN0790-270MP	COIL	27μH
L105	PELN0325-100KZ	COIL	10μH

#△	REF No.	PART No.	PART NAME, DESCRIPTION	
	L106	PELN0790-220MP	COIL	22μH
	L107	PELN0790-100MP	COIL	10μH
	L108	PELN0959-P	SW TRANS	
	L109	PELN0325-330KZ	COIL	33μH
	L110	PELN0325-330KZ	COIL	33μH
	SW1	PESW0611	SLIDE SWITCH	
	J1	YQ31418-1-1	PIN JACK(SW)	
	J2	YQ43505	AV JACK	
	KNB1	YQ43482-1-3	KNOB(EJECT)	
	TML1	YQ31096-1-2	BATTERY TERMINAL UNIT	
△	TML2	YQ31344-2	BATTERY TERMINAL UNIT,J3	
	CN1	PEMC0988-048-X	CONNECTOR	
	CN2	PEMC1073-007-R	CONNECTOR	
	CN3	PEMC0855-007-P	CONNECTOR	
	CN5	PEMC1073-007-R	CONNECTOR	
	CN6	PEMC1073-002-P	CONNECOTR	
△	CP2	ICP-N20	CIRCUIT PROTECTOR	
△	CP3	ICP-N20	CIRCUIT PROTECTOR	
△	CP4	ICP-N38	CIRCUIT PROTECTOR	
△	CP6	ICP-N38	CIRCUIT PROTECTOR	

****

MIC AMP BOARD ASSEMBLY <03>

#△	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	YB20695A	MIC AMP BOARD ASSY	
	IC1	BA7781K	IC	
	IC101	MSM6372-114VK-X	IC	
	Q5	2SC4617(QRS)	TRANSISTOR	
	Q101	2SC4617(QRS)	TRANSISTOR	
	Q102	2SC4617(QRS)	TRANSISTOR	
	D101	DA221	DIODE	
	D102	DA221	DIODE	
	R1	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R2	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R3	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R4	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R5	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R6	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R7	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R8	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R11	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R12	NRSA63J-822N	RESISTOR	8.2kΩ,1/16W
	R19	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R20	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R23	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R24	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R25	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R26	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R27	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R28	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R29	NRSA63J-243N	RESISTOR	24kΩ,1/16W
	R30	NRSA63J-243N	RESISTOR	24kΩ,1/16W
	R31	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
	R32	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R37	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R38	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R39	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R40	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R41	NRSA63J-564N	RESISTOR	560kΩ,1/16W
	R42	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R45	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R46	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R48	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R101	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R102	NRSA63J-273N	RESISTOR	27kΩ,1/16W
	R103	NRSA63J-392N	RESISTOR	3.9kΩ,1/16W
	R104	NRSA63J-154N	RESISTOR	150kΩ,1/16W
	R105	NRSA63J-153N	RESISTOR	15kΩ,1/16W
	R106	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R107	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R108	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R109	NRSA63J-823N	RESISTOR	82kΩ,1/16W
	R110	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R111	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
	R112	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	C1	QCYA1EK-153	CAPACITOR	0.015μF,25V
	C2	QCYA1EK-153	CAPACITOR	0.015μF,25V
	C5	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C6	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C7	NCB31EK-153A	CAPACITOR	0.015μF,25V
	C8	NCB31EK-153A	CAPACITOR	0.015μF,25V
	C9	QCFA1CZ-105	CAPACITOR	1μF,16V
	C10	QCFA1CZ-105	CAPACITOR	1μF,16V
	C13	YU41415-J106AW	T CAPACITOR	10μF,6.3V
	C14	YU41415-J106AW	T CAPACITOR	10μF,6.3V
	C15	QCFA1CZ-105	CAPACITOR	1μF,16V
	C16	QCFA1CZ-105	CAPACITOR	1μF,16V
	C17	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C18	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C19	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C20	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C21	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C22	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C25	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C26	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C27	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C28	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C29	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C30	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C31	NEE21VM-104RY	E CAPACITOR	0.1μF,35V
	C33	NEE20JM-226RY	E CAPACITOR	22μF,6.3V
	C34	NEE21VM-104RY	E CAPACITOR	0.1μF,35V
	C36	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C40	YU40688-336N	E CAPACITOR	33μF,10V
	C42	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C43	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C44	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C45	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C46	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C101	NCS31HJ-101A	CAPACITOR	100pF,50V
	C102	NEE21AM-335RY	E CAPACITOR	3.3μF,10V
	C103	QCFA1CZ-105	CAPACITOR	1μF,16V
	C104	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C105	NCB31EK-153A	CAPACITOR	0.015μF,25V
	C106	QCFA1CZ-105	CAPACITOR	1μF,16V
	C107	NCF31CZ-224A	CAPACITOR	0.22μF,16V
	C108	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	CN1	YU40095-3	CONNECTOR	
	CN2	YU41356-4-R	CONNECTOR	
	CN3	YU40095-8	CONNECTOR	

****

JACK BOARD ASSEMBLY <04>

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA2	YB10121A2	JACK BOARD ASSY	
JA1	PEMC1062	MIC JACK	
CN1	PEMC0793-4	CONNECTOR	

****

TRANS BOARD ASSEMBLY <05>

PWBA2	YB10122A2-01	TRANS BOARD ASSY	
Q201	2SC4617(R)	TRANSISTOR	
R201	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R202	NRSA63J-120N	RESISTOR	12Ω,1/16W
C201	NCF31CZ-473A	CAPACITOR	0.047μF,16V
C202	NEE21AM-106RY	E CAPACITOR	10μF,10V
C203	NEA20JM-107NP	E CAPACITOR	100μF,6.3V
L201	PELN1021	COIL	
L202	YU40740-101K	COIL	100μH
CN201	YU41356-2-P	CONNECOTR	
CN202	YU41354-3-P	CONNECTOR	

****

SENSOR BOARD ASSEMBLY <06>

PWBA	YQ31063D	SENSOR BOARD ASSY

****

OPERATION(CAMERA) BOARD ASSEMBLY <07>

PWBA	YQ20764-2	OPERATION(CAMERA)BOARD ASSY

****

END SENSOR BRAKET ASSEMBLY <08>

PWBA	YQ42930A	END SENSOR BRAKET ASSY
BKT1	YQ31354	END SENSOR BKT

****

CCD BOARD ASSEMBLY <11>

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	YB20711A	CCD BOARD ASSY	
IC101	TC7SH04FU	IC	
IC102	TC7SH08FU	IC	
IC103	74AC11074DBL	IC	
IC104	MN7A010MVB1	IC	
IC105	TC7SH08FU	IC	
IC106	TC7SH04FU	IC	
IC201	TC6202AF	IC	
	or TC6202HS	IC	
IC301	MN3112SA	IC	
IC401	NN2037FAQ	IC	
Q301	2SD1819(QR)	TRANSISTOR	
	or 2SC4081(QR)	TRANSISTOR	
	or 2SC4116(OY)	TRANSISTOR	
Q302	XP5501	PAIR TRANSISTOR	
Q303	XP5501	PAIR TRANISSTOR	
Q401	2SC3936(BC)	TRANSISTOR	
Q402	2SA1790	TRANSISTOR	
Q403	2SA1790	TRANSISTOR	
D301	MA141WK	DIODE	
D302	MA143	DIODE	
D303	MA141WK	DIODE	
D304	MA143	DIODE	
D305	MA143	DIODE	
R1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R101	NRVA63D-390N	RESISTOR	39Ω,1/16W
R102	NRSA63J-273N	RESISTOR	27kΩ,1/16W
R103	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R105	YU41607-Y	FERR.BEADS	
R106	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R107	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R201	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R203	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R205	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R206	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R211	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R212	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R213	NRSA63J-681N	RESISTOR	680Ω,1/16W
R214	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R215	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R217	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R218	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R219	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R222	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R223	NVP1202-331N	V RESISTOR,CLOCK TIMING	
R226	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R228	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R302	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R303	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R304	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R305	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R306	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R307	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R308	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R309	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R310	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R311	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R312	NRSA63J-153N	RESISTOR	15kΩ,1/16W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R313	NRSA63J-432N	RESISTOR	4.3kΩ,1/16W
	R314	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R315	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R401	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R402	NRSA63J-102N	RESISTOR	1kΩ,1/16W
	R403	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R406	NRSA63J-103N	RESISTOR	10kΩ,1/16W
	R407	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
	R408	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R409	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R410	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	R411	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
	C1	NEE20JM-226RY	E CAPACITOR	22µF,6.3V
	C2	NEE20JM-226RY	E CAPACITOR	22µF,6.3V
	C102	NCT07CH-100A	CAPACITOR	10pF,50V
	C103	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C104	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C105	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C106	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C201	NEE21CM-105RY	E CAPACITOR	1µF,16V
	C202	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C203	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C204	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C205	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C302	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C304	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C305	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C307	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C309	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C310	NEE20JM-475RY	E CAPACITOR	4.7µF,6.3V
	C311	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C312	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C313	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C314	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C315	NEE21CM-105RY	E CAPACITOR	1µF,16V
	C316	NEE21AM-106RY	E CAPACITOR	10µF,10V
	C317	NEE21VM-105RY	E CAPACITOR	1µF,35V
	C318	NEE21CM-106RY	E CAPACITOR	10µF,16V
	C401	NCT07CH-180A	CAPACITOR	18pF,50V
	C402	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C403	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C404	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C405	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C406	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C407	NEE20JM-476RZ	E CAPACITOR	47µF,6.3V
	C408	YU41970-J106AW	T CAPACITOR	10µF,6.3V
	C409	NCF31CZ-473A	CAPACITOR	0.047µF,16V
	C410	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C411	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C412	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C413	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C414	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C415	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C416	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C417	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C418	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C420	NCF31CZ-104A	CAPACITOR	0.1µF,16V
	C421	NEE21CM-105RY	E CAPACITOR	1µF,16V
	C422	NEE20GM-685RY	E CAPACITOR	6.8µF,4.0V
	L1	YU41674-Y	CHIP BEADS	
	L2	YU41674-Y	CHIP BEADS	
	L101	YU40740-220K	COIL	22µH
	L102	YU40740-220K	COIL	22µH
	L201	YU40740-220K	COIL	22µH
	L202	YU40740-220K	COIL	22µH
	L203	YU41674-Y	CHIP BEADS	
	L301	YU40740-220K	COIL	22µH
	L401	YU40740-330KY	COIL	33µH
	L402	YU40740-220K	COIL	22µH
	L403	QRS188J-0R0YN	RESISTOR	0Ω,1/8W
⚠	X101	PEVB0552	CXO	
	WR1	ML-Y00714A	AD WIRE1	
	WR2	ML-Y00717A	CCD WIRE 1,VR1	
	CN1	PEMC1040	CONNECTOR	
	CN2	PEMC1018-024-R	CONNECTOR	
	CN3	PEMC1073-005-R	CONNECTOR	
	CN4	PEMC1073-002-P	CONNECTOR	

****

PROCESS BOARD ASSEMBLY <12>

PWBA	YB10127A	PROCESS BOARD ASSY
IC101	MN673211JFJ	IC
IC102	MN5203	IC
IC103	JCY0034	IC
IC104	TC7SH08FU	IC
IC201	JCY0033	IC
IC202	ZA4035	IC
IC301	PST9130	IC
IC302	S-2927AIF10G-W	IC
IC303	MN1020701FHP	IC
IC304	M62366GP	IC
IC305	TC7W08FU	IC
IC306	TA75W01FU	IC
IC307	TC7S04FU	IC
IC308	TK11235M	IC
IC401	MN65703T	IC
IC402	EHDGA1488	IC
	or EHDGA1450	IC
IC403	AN2458SH	IC
IC501	NJM3416V	IC
IC502	TA75W01FU	IC
IC503	SPC17A85ZVM	IC
IC504	SPC17A85ZVM	IC
IC505	TA75W01FU	IC
IC506	TC7S66FU	IC
IC507	TC7S08FU	IC
Q402	2SC4655	TRANSISTOR
Q403	2SC4655	TRANSISTOR
Q404	UMX1	TRANSISTOR
Q405	2SC4655	TRANSISTOR
Q406	2SC4655	TRANSISTOR
Q407	2SC4655	TRANSISTOR
Q501	DTC144EE	TRANSISTOR
	or RN1104	TRANSISTOR
Q502	2SA1532(BC)	TRANSISTOR
Q503	2SC4655	TRANSISTOR
Q504	XP1216	TRANSISTOR
Q506	XP1216	TRANSISTOR
Q507	UMZ1	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q508	DTC144EE	TRANSISTOR	
	or RN1104	TRANSISTOR	
D301	RB715F	DIODE	
D401	MA143	DIODE	
D501	IMN10	DIODE	
R101	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R104	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R105	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R114	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R116	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R122	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R125	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R201	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R204	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R207	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R208	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R209	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R301	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R302	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R303	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R304	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R305	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R307	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R308	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R309	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R311	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R312	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R320	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R321	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R331	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R332	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R333	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R334	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R335	NRSA63J-221N	RESISTOR	220Ω,1/16W
R337	NRSA63J-221N	RESISTOR	220Ω,1/16W
R339	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R340	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R342	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R345	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R349	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R350	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R354	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R355	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R356	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R357	NRSA63J-125N	RESISTOR	1.2MΩ,1/16W
R358	NRSA63J-225N	RESISTOR	2.2MΩ,1/16W
R359	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R360	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R361	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R362	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R363	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R365	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R366	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R367	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R368	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R369	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R401	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R402	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R403	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R404	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R406	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R407	NRSA63J-243N	RESISTOR	24kΩ,1/16W
R409	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R411	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R412	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R413	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R415	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R418	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R419	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R420	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R421	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R422	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R423	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R424	NRSA63J-823N	RESISTOR	82kΩ,1/16W
R425	NRSA63J-823N	RESISTOR	82kΩ,1/16W
R427	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R429	NRSA63J-302N	RESISTOR	3kΩ,1/16W
R430	NRSA63J-392N	RESISTOR	3.9kΩ,1/16W
R431	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R432	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R433	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R434	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R437	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R438	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R439	NRSA63J-203N	RESISTOR	20kΩ,1/16W
R440	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R441	NRSA63J-183N	RESISTOR	18kΩ,1/16W
R442	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R443	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R445	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R446	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R447	NRSA63J-162N	RESISTOR	1.6kΩ,1/16W
R454	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R455	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R456	NRSA63J-203N	RESISTOR	20kΩ,1/16W
R501	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R502	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R504	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R505	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R506	NRSA63J-134N	RESISTOR	130kΩ,1/16W
R507	NRSA63J-181N	RESISTOR	180Ω,1/16W
R508	NRSA63J-753N	RESISTOR	75kΩ,1/16W
R509	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R510	NRSA63J-911N	RESISTOR	910Ω,1/16W
R511	NRSA63J-912N	RESISTOR	9.1kΩ,1/16W
R512	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R513	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R514	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R515	NRSA63J-303N	RESISTOR	30kΩ,1/16W
R516	NRSA63J-123N	RESISTOR	12kΩ,1/16W
R517	NRSA63J-821N	RESISTOR	820Ω,1/16W
R519	NRSA63J-622N	RESISTOR	6.2kΩ,1/16W
R520	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R521	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R522	NRSA63J-123N	RESISTOR	12kΩ,1/16W
R523	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R524	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R525	NRSA63J-104N	RESISTOR	100kΩ,1/16W
R526	NRSA63J-273N	RESISTOR	27kΩ,1/16W
R527	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R528	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R530	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R531	NRSA63J-3R6N	RESISTOR	3.6Ω,1/16W
R533	NRSA63J-304N	RESISTOR	300kΩ,1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R537	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R538	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R539	NRSA63J-3R6N	RESISTOR	3.6Ω,1/16W
R540	NRSA63J-100N	RESISTOR	10Ω,1/16W
R541	NRSA63J-100N	RESISTOR	10Ω,1/16W
R542	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R544	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R545	NRSA63J-4R3N	RESISTOR	4.3Ω,1/16W
R552	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R553	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R554	NRSA63J-4R3N	RESISTOR	4.3Ω,1/16W
R557	NRSA63J-100N	RESISTOR	10Ω,1/16W
R558	NRSA63J-100N	RESISTOR	10Ω,1/16W
R560	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R561	NRSA63J-432N	RESISTOR	4.3kΩ,1/16W
R562	NRSA63J-271N	RESISTOR	270Ω,1/16W
R563	NRSA63J-134N	RESISTOR	130kΩ,1/16W
R564	NRSA63J-753N	RESISTOR	75kΩ,1/16W
R565	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R566	NRSA63J-103N	RESISTOR	10kΩ,1/16W
C101	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C102	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C103	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C104	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C105	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C106	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C107	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C108	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C110	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C111	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C112	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C113	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C114	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C115	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C116	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C117	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C119	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C201	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C202	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C203	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C204	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C205	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C206	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C207	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C208	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C211	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C213	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C214	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C215	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C216	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C217	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C301	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C302	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C303	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C304	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C305	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C306	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C308	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C309	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C310	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C311	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C312	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C313	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C314	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C315	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C318	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C319	NCB31CK-183A	CAPACITOR	0.018μF,16V
C320	NCB31CK-183A	CAPACITOR	0.018μF,16V
C321	NEE21AM-106RY	E CAPACITOR	10μF,10V
C322	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C323	NEE21AM-335RY	E CAPACITOR	3.3μF,10V
C324	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C325	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C327	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C328	NEE21AM-106RY	E CAPACITOR	10μF,10V
C329	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C330	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C401	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C402	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C403	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C404	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C405	QCFA1CZ-105	CAPACITOR	1μF,16V
C406	QCFA1CZ-105	CAPACITOR	1μF,16V
C407	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C408	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C409	QCFA1CZ-105	CAPACITOR	1μF,16V
C410	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C411	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C412	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C415	NCT07CH-101A	CAPACITOR	100pF,50V
C416	NCT07CH-101A	CAPACITOR	100pF,50V
C417	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C418	QCYA1EK-104	CAPACITOR	0.1μF,25V
C419	NCB31EK-103A	CAPACITOR	0.01μF,25V
C420	NCB31EK-103A	CAPACITOR	0.01μF,25V
C421	NCB31EK-103A	CAPACITOR	0.01μF,25V
C422	QCYA1EK-473	CAPACITOR	0.047μF,25V
C423	QCYA1EK-104	CAPACITOR	0.1μF,25V
C424	NCB31EK-103A	CAPACITOR	0.01μF,25V
C425	NCT06CH-100A	CAPACITOR	10pF,50V
C426	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C427	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C428	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C429	QCYA1EK-104	CAPACITOR	0.1μF,25V
C430	NCB31EK-103A	CAPACITOR	0.01μF,25V
C431	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C432	QCYA1EK-104	CAPACITOR	0.1μF,25V
C433	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C434	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C435	NCB31EK-103A	CAPACITOR	0.01μF,25V
C501	NEE21CM-226RZ	E CAPACITOR	22μF,16V
C502	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C503	YU41970-J106AW	T CAPACITOR	10μF,6.3V
C504	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C507	QCYA1EK-104	CAPACITOR	0.1μF,25V
C509	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C510	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C511	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C513	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C514	NCB31EK-153A	CAPACITOR	0.015μF,25V
C515	QCYA1EK-104	CAPACITOR	0.1μF,25V
C516	NCB31EK-103A	CAPACITOR	0.01μF,25V
C517	NEE21CM-226RZ	E CAPACITOR	22μF,16V
C518	NCF31CZ-104A	CAPACITOR	0.1μF,16V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C519	NCB31HK-272A	CAPACITOR	0.0027μF,50V
	C520	NCB31HK-272A	CAPACITOR	0.0027μF,50V
	C521	NCB31HK-272A	CAPACITOR	0.0027μF,50V
	C522	NCB31HK-332A	CAPACITOR	0.0033μF,50V
	C524	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C525	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C526	NCB31HK-332A	CAPACITOR	0.0033μF,50V
	C527	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C528	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C529	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C530	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C531	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	L1	YU41674-Y	FERR. BEADS	
	L2	YU41674-Y	FERR. BEADS	
	L3	YU41674-Y	FERR. BEADS	
	L101	YU40740-220K	COIL	22μH
	L102	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	L103	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	L104	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	L105	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	L106	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	L107	YU40740-220K	COIL	22μH
	L108	YU40740-220K	COIL	22μH
	L201	YU40740-220K	COIL	22μH
	L203	YU40740-220K	COIL	22μH
	L301	YU40740-220K	COIL	22μH
	L303	YU40740-220K	COIL	22μH
	L401	YU40740-220K	COIL	22μH
	L402	YU40740-220K	COIL	22μH
	L403	YU40740-220K	COIL	22μH
	L501	YU40740-220K	COIL	22μH
	L502	QRS188J-0R0YN	RESISTOR	0Ω,1/8W
	L504	PELN0325-390KZ	COIL	39μH
	EQ401	PELN1002-Z	EQUALIZER	
	BPF401	PELN0875-Z	BAND PASS FILTER	
⚠	X301	PEVB0582-Z	RESONATOR	
	CN1	YU41356-9-R	CONNECTOR	
	CN2	PEMC0988-030-R	CONNECTOR	
	CN3	PEMC1018-022-R	CONNECTOR	
	CN4	PEMC1018-016-R	CONNECTOR	

****

A/D BOARD ASSEMBLY <13>

PWBA	YB30095A	A/D BOARD ASSY	
IC501	MN65761T	IC	
IC502	TC7SH04FU	IC	
IC601	CF45519PM	IC	
R1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R601	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R602	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R604	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R606	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R608	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
RA601	YU40172-102NY	NETWORK RESISTOR	1KΩ,1/32W x4
RA602	YU40172-102NY	NETWORK RESISTOR	1KΩ,1/32W x4
RA603	YU40172-102NY	NETWORK RESISTOR	1KΩ,1/32W x4
RA604	YU40172-102NY	NETWORK RESISTOR	1KΩ,1/32W x4

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C501	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C502	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C503	YU41970-J106AW	T CAPACITOR	10μF,6.3V
	C504	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C505	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C506	YU41970-J106AW	T CAPACITOR	10μF,6.3V
	C601	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C602	YU41970-J106AW	T CAPACITOR	10μF,6.3V
	C603	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C604	YU41970-J106AW	T CAPACITOR	10μF,6.3V
	L501	YU40740-220K	COIL	22μH
	L502	YU40740-220K	COIL	22μH
	L503	YU41607-Y	FERR. BEADS	
	L602	YU40740-220K	COIL	22μH
	L603	YU40740-220K	COIL	22μH
	WR1	ML-Y00715A	AD WIRE2	
	WR2	ML-Y00716A	CCD WIRE 2	
	CN501	PEMC0855-024-R	CONNECTOR	
	CN502	YU41356-2-P	CONNECTOR	
	CN601	PEMC0989-030-R	CONNECTOR	

****

DRUM BOARD <40>

PWB	YDM3068-3	BOARD (UPPER DRUM)

****

PBL BOARD ASSEMBLY <51>

PWBA1	YB20696A1-01	PBL BOARD ASSY	
IC101	FA7615M-XE	IC	
IC102	TA75S01F	IC	
IC103	TC7W04FU	IC	
Q101	2SC3646(S)	TRANSISTOR	
Q102	XP2501	TRANSISTOR	
D102	SB07-03C-X	SB DIODE	
D103	MA110	DIODE	
R101	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R102	NRVA63D-563N	RESISTOR	56kΩ,1/16W
R105	NRVA63D-562N	RESISTOR	5.6kΩ,1/16W
R106	NRVA63D-682N	RESISTOR	6.8kΩ,1/16W
R108	NRVA63D-273N	RESISTOR	27kΩ,1/16W
R109	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R111	NRVA63D-682N	RESISTOR	6.8kΩ,1/16W
R112	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R113	NRSA63J-753N	RESISTOR	75kΩ,1/16W
R114	NVP1202-471N	V RESISTOR,REG 13.5V	
R116	NRVA63D-153N	RESISTOR	15kΩ,1/16W
R117	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R118	NRVA63D-563N	RESISTOR	56kΩ,1/16W
R119	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R121	NRVA63D-203N	RESISTOR	20kΩ,1/16W
R123	NRVA63D-273N	RESISTOR	27kΩ,1/16W
R124	NRVA63D-183N	RESISTOR	18kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R126	NRVA63D-122N	RESISTOR	1.2kΩ,1/16W
R127	NRSA63J-393N	RESISTOR	39kΩ,1/16W
R128	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R129	NRSA63J-225N	RESISTOR	2.2MΩ,1/16W
R130	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R132	NRVA63D-513N	RESISTOR	51kΩ,1/16W
R133	NRVA63D-123N	RESISTOR	12kΩ,1/16W
R134	NRVA63D-123N	RESISTOR	12kΩ,1/16W
R135	NRSA63J-184N	RESISTOR	180kΩ,1/16W
R136	NRVA63D-202N	RESISTOR	2kΩ,1/16W
C102	QCTA1CH-122	CAPACITOR	0.0012μF,16V
C103	QCYA1EK-104	CAPACITOR	0.1μF,25V
C105	QCYA1EK-104	CAPACITOR	0.1μF,25V
C106	NCT06CH-330A	CAPACITOR	33pF,50V
C107	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C108	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C109	NEE21AM-476RZ	E CAPACITOR	47μF,10V
C110	NEE21DM-226RZ	E CAPACITOR	22μF,20V
C113	QCFA1CZ-105	CAPACITOR	1μF,16V
C115	NEE21EM-105RY	E CAPACITOR	1μF,25V
C116	NEE21AM-106RY	E CAPACITOR	10μF,10V
C118	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C119	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C120	NEE21CM-225RY	E CAPACITOR	2.2μF,16V
L101	YU41135-220K	COIL	22μH
L102	PELN0999-681MP	COIL	680μH
L103	YU41135-220K	COIL	22μH
L104	YU41135-220K	COIL	22μH
CN101	PEMC0934-007-P	CONNECTOR	
CN102	YU41358-12-R	CONNECTOR	

****

CLD BOARD ASSEMBLY <52>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA2	YB20696A2-01	CLD BOARD ASSY	
IC201	CXA1785R	IC	
IC202	CXD2403R	IC	
Q202	XP2501	TRANSISTOR	
Q203	UN921K	TRANSISTOR	
D201	MA365	DIODE	
R201	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R202	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R204	NRSA6AJ-183AW	RESISTOR	18kΩ,1/16W
R205	NVP1202-223N	V RESISTOR,COLOR LEVEL	
R206	NRSA6AJ-623AW	RESISTOR	62kΩ,1/16W
R208	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
R212	NRSA6AJ-473AW	RESISTOR	47kΩ,1/16W
R213	NVP1202-223N	V RESISTOR,COLOR PHASE	
R214	NRSA6AJ-753AW	RESISTOR	75kΩ,1/16W
R215	NRSA6AJ-822AW	RESISTOR	8.2kΩ,1/16W
R216	NRSA6AJ-562AW	RESISTOR	5.6kΩ,1/16W
R217	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R218	NRVA63D-273N	RESISTOR	27kΩ,1/16W
R219	NRVA63D-333N	RESISTOR	33kΩ,1/16W
R224	NRVA63D-393N	RESISTOR	39kΩ,1/16W
R225	NRVA63D-273N	RESISTOR	27kΩ,1/16W
R228	NRVA63D-823N	RESISTOR	82kΩ,1/16W
R229	NRSA6AJ-103AW	RESISTOR	10kΩ,1/16W
R230	YU41218-223NZ	V RESISTOR,BRIGHT	
R231	NRVA63D-623N	RESISTOR	62kΩ,1/16W
R233	NRVA63D-752N	RESISTOR	7.5kΩ,1/16W
R234	NRSA6AJ-393AW	RESISTOR	39kΩ,1/16W
R235	NVP1202-223N	V RESISTOR,SUB BRT R	
R236	NRSA6AJ-393AW	RESISTOR	39kΩ,1/16W
R237	NRSA6AJ-393AW	RESISTOR	39kΩ,1/16W
R238	NVP1202-223N	V RESISTOR,SUB BRT B	
R239	NRSA6AJ-393AW	RESISTOR	39kΩ,1/16W
R240	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R241	NRSA6AJ-473AW	RESISTOR	47kΩ,1/16W
R242	NVP1202-223N	V RESISTOR,CONTRAST	
R243	NRSA6AJ-393AW	RESISTOR	39kΩ,1/16W
R244	NRVA63D-183N	RESISTOR	18kΩ,1/16W
R245	NRSA6AJ-564AW	RESISTOR	560kΩ,1/16W
R246	NRSA6AJ-473AW	RESISTOR	47kΩ,1/16W
R247	NRSA6AJ-473AW	RESISTOR	47kΩ,1/16W
R248	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R249	NRSA6AJ-224AW	RESISTOR	220kΩ,1/16W
R252	NRVA63D-472N	RESISTOR	4.7kΩ,1/16W
R253	NRVA63D-332N	RESISTOR	3.3kΩ,1/16W
R254	NRSA6AJ-474AW	RESISTOR	470kΩ,1/16W
R255	NRSA6AJ-103AW	RESISTOR	10kΩ,1/16W
R256	NRSA6AJ-562AW	RESISTOR	5.6kΩ,1/16W
R257	NRSA6AJ-333AW	RESISTOR	33kΩ,1/16W
R258	NRSA6AJ-103AW	RESISTOR	10kΩ,1/16W
R259	NRSA6AJ-333AW	RESISTOR	33kΩ,1/16W
R260	NVP1202-223N	V RESISTOR,OSC	
R261	NRSA6AJ-273AW	RESISTOR	27kΩ,1/16W
R264	NRVA63D-163N	RESISTOR	16kΩ,1/16W
R266	NRVA63D-163N	RESISTOR	16kΩ,1/16W
R267	NRSA6AJ-102AW	RESISTOR	1kΩ,1/16W
R268	NRSA6AJ-182AW	RESISTOR	1.8kΩ,1/16W
R271	NRSA6AJ-163AW	RESISTOR	16kΩ,1/16W
R272	NRSA6AJ-3R0AW	RESISTOR	3Ω,1/16W
R273	NRSA6AJ-3R0AW	RESISTOR	3Ω,1/16W
C201	QCFA1CZ-105	CAPACITOR	1μF,16V
C203	YU41415-J106AW	T CAPACITOR	10μF,6.3V
C205	NCB31EK-103A	CAPACITOR	0.01μF,25V
C208	QCYA1EK-473	CAPACITOR	0.047μF,25V
C212	NCB31EK-223A	CAPACITOR	0.022μF,25V
C213	NCB31EK-103A	CAPACITOR	0.01μF,25V
C214	NCB31EK-103A	CAPACITOR	0.01μF,25V
C215	QCFA1CZ-474	CAPACITOR	0.47μF,16V
C216	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C217	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C218	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C220	QCFA1CZ-105	CAPACITOR	1μF,16V
C221	NCB31EK-103A	CAPACITOR	0.01μF,25V
C222	NCB31EK-103A	CAPACITOR	0.01μF,25V
C223	NCB31EK-103A	CAPACITOR	0.01μF,25V
C224	NCB31EK-103A	CAPACITOR	0.01μF,25V
C225	NCB31EK-103A	CAPACITOR	0.01μF,25V
C226	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C228	NCB31EK-103A	CAPACITOR	0.01μF,25V
C229	NCB31EK-103A	CAPACITOR	0.01μF,25V
C230	NCB31EK-103A	CAPACITOR	0.01μF,25V
C231	NCB31EK-682A	CAPACITOR	0.0068μF,25V
C232	QCFA1CZ-225	CAPACITOR	2.2μF,16V
C233	NCB31EK-103A	CAPACITOR	0.01μF,25V
C234	QCFA1CZ-225	CAPACITOR	2.2μF,16V
C237	QCFA1CZ-105	CAPACITOR	1μF,16V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C241	QCFA1CZ-105	CAPACITOR	1μF,16V
	C242	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C243	QCFA1CZ-225	CAPACITOR	2.2μF,16V
	C244	NCB31EK-332A	CAPACITOR	0.0033μF,25V
	C246	NCT06CH-101A	CAPACITOR	100pF,50V
	C247	NCB31HK-102A	CAPACITOR	0.001μF,50V
	C248	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C250	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C252	QCFA1CZ-105	CAPACITOR	1μF,16V
	L207	PELN0865-8R2KY	COIL	8.2μH
	TRAP201	YU41325-3R6B-Z	CHIP TRAP	
⚠	X201	PEVB0540-R	CRYSTAL RESONATOR	
	CN201	YU41359-12-P	CONNECTOR,(BOARD TO BOARD)	
	CN202	YU41358-10-R	CONNECTOR	
	CN203	PEMC0880-016-R	CONNECTOR	

****

BL BOARD ASSEMBLY <53>

	PWBA3	YB20696A3-01	BL BOARD ASSY	
	Q301	2SK1254S	TRANSISTOR	
	D301	MA110	DIODE	
	R301	NRSA63J-104N	RESISTOR	100kΩ,1/16W
	R302	NRVA63D-151N	RESISTOR	150Ω,1/16W
	C301	NEE21CM-336RZ	E CAPACITOR	33μF,16V
	C302	QCYA1HK-122	CAPACITOR	0.0012μF,50V
	C303	QCYA1HK-122	CAPACITOR	0.0012μF,50V
	C304	QCF81CZ-225	CAPACITOR	2.2μF,16V
	L301	YU41135-220K	COIL	22μH
⚠	T301	PELN0958-R	SW TRANS	
	FL301	PEDP0141	LAMP	
	CN301	YU41359-10-P	CONNECTOR	

SECTON 6
TECHNICAL INFORMATION

6.1 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, the POWER LED will be flickered and an error number (E 05, for example) displayed on the electronic view finder.

E. VF DISPLAY	Symptom	Mode when observed	Resulting mode
E 06	CAPSTAN FG input absent	EDIT	STOP
E 05	PB CTL PULSE input absent	EDIT	STOP
E 04	DRUM FF input absent	DRUM rotation	STOP
E 03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	STOP
E 02	Mode control motor rotates for more than 10 sec, without shift to next mode.	UNLOADING	Mode continues
E 01	Mode control motor rotates for more than 10 sec, without shift to next mode.	LOADING	Mode continues

Emergency mode : Indication for 5 minutes, then power OFF
Port states : Same as Stop mode
Effective key : POWER
Shifted mode : Power OFF

6.2 DEMONSTRATION MODE

This model is equipped with the function to display P. AE/EFFECT and FADE/WIPE operations partly in the monitor.

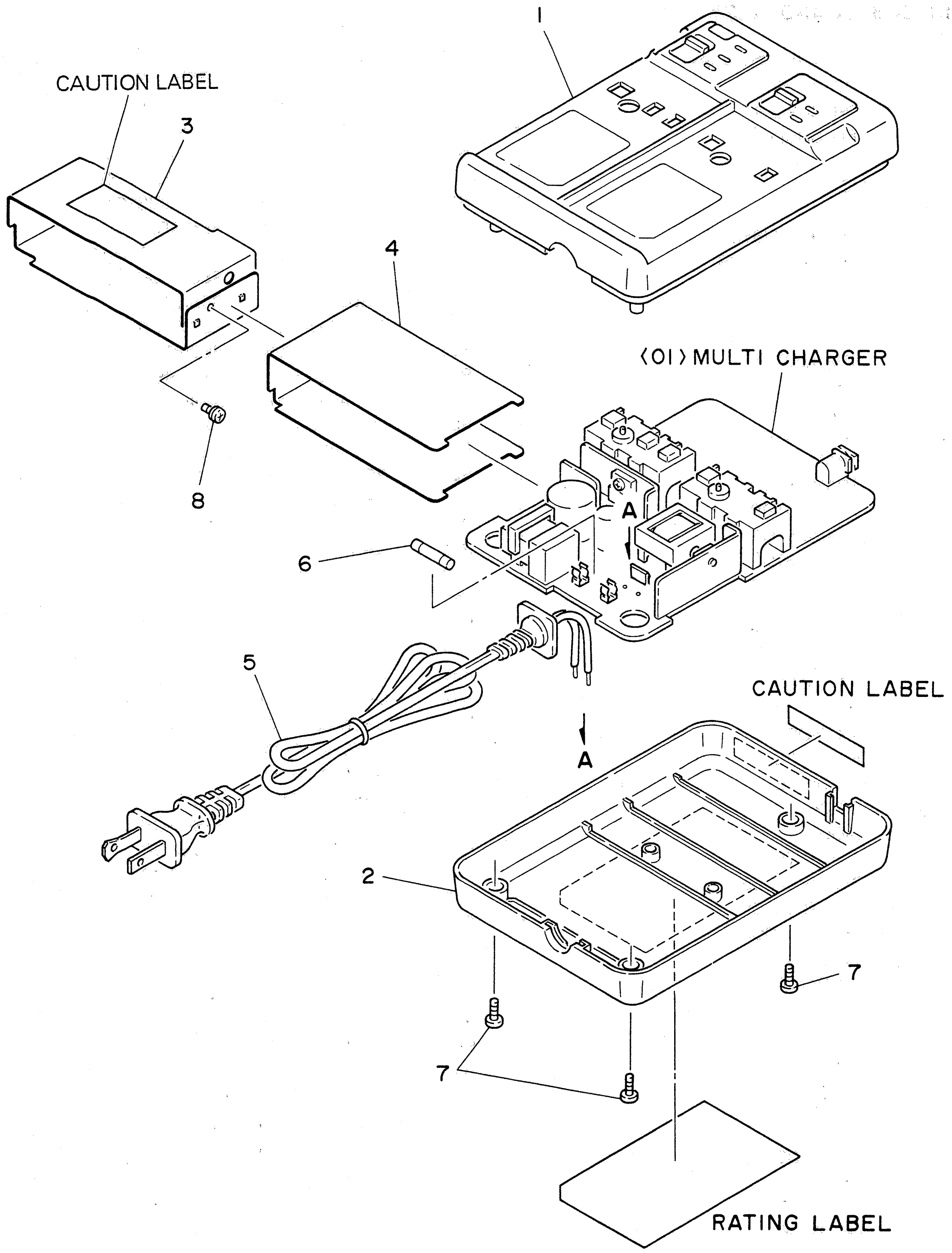
1) How to set DEMONSTRATION mode
   Without any cassette tape being loaded, depress two buttons of the D. I. STABILIZER and the PAUSE simultaneously first while setting the POWER switch to the REC position.

1. B/W FADER
2. MOSAIC FADER
3. DISSOLVE
4. DOOR
5. WINDOW WIPE
6. CORNER WIPE
7. SCROLL WIPE
8. SLIDE WIPE
9. SHUTTER WIPE
10. SCROLL WIPE
11. WHITE FADER
12. VIDEO ECHO
13. SEPIA
14. CLASSIC FILM
15. MONOTONE
16. STOROBE 2
17. CINEMA
18. PHOTO (SNAP SHOT)
19. PHOTO (MOTOR DRIVE MODE)

2) How to cancel DEMONSTRATION mode
   Set the POWER switch to the POWER OFF position, and the DEMONSTRATION mode is cancelled.

SECTION 7
MULTI CHARGER ADAPTER (AA-V35U)

7.1 MULTI CHARGER ASSEMBLY <M2>


1
CAUTION LABEL
3
4
(01) MULTI CHARGER
8
A
6
5
CAUTION LABEL
A
2
7
7
7
RATING LABEL

****

CABINET ASSY <M2>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	YQ20753A	UPPER CASE ASSY INCL:SLIDE KNOB, BUTTON
⚠	2	YQ10477	LOWER CASE
	3	YQ31599	SHIELD PLATE
⚠	4	YQ31600	INSULATOR
⚠	5	QMP14F0-200	POWER CORD
⚠	6	QMF51J2-2R0	FUSE
	7	SPSG2608M	SCREW,X3
	8	LPSP3004ZY	SCREW

7.2 ELECTRICAL PARTS LIST

****

ADP MAIN SUB BOARD ASSY <01>

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	YB20688A	MAIN BOARD ASSY	
	JK1	PEMC0930	DC JACK	
⚠	PHC1	PS2501-1(DL)	PH CUPLER	
⚠		or PC817BC	PH COUPLER	
	IC21	JCY0037	IC	
	IC22	UPD17135AGT729X	IC	
		or UPD17P137AGT	IC	
	Q1	2SK2043	FE TRANSISTOR	
		or 2SK1953	FE TRANSISTOR	
		or 2SK1821-01M	FE TRANSISTOR	
	Q21	2SB598(FG)	TRANSISTOR	
	Q22	2SA1641(ST)	TRANSISTOR	
		or 2SA1615(L)	TRANSISTOR	
	Q23	DTC123EU	TRANSISTOR	
	Q24	2SB598(FG)	TRANSISTOR	
	Q25	DTC123EU	TRANSISTOR	
	Q26	2SA1641(ST)	TRANSISTOR	
		or 2SA1615(L)	TRANSISTOR	
	Q27	DTC123EU	TRANSISTOR	
	Q28	FMG9	TRANSISTOR	
	Q29	FMA7	TRANSISTOR	
	Q30	DTA143XU	TRANSISTOR	
	Q31	DTC123JU	TRANSISTOR	
	D1	DBC10G	BRIDGE DIODE	
		or DF06M	BRIDGE DIODE	
	D2	AP01C-LFN1	FR DIODE	
		or ERA22-08Y	DIODE	
	D3	RMPG06D	FR DIODE	
		or ERA18-02-T2	FR DIODE	
		or AU02Z	FR DIODE	
	D4	ERA15-01-T2	DIODE	
		or AM01Z	DIODE	
	ZD1	RD20ES-T1B3	ZENER DIODE	
	ZD2	RD27ES-T1B3	ZENER DIODE	
	ZD3	RD4.7ES-T1B3	ZENER DIODE	
	ZD4	RD27ES-T1B3	ZENER DIODE	
	D21	SBA50-09JLS	SB DIODE	
		or FMB-29	SB DIODE	
	D22	MA165	DIODE	
		or 1SS133	DIODE	
	D23	MA165	DIODE	
		or 1SS133	DIODE	
	D25	DAN202U	DIODE	
		or MA141WK	DIODE	
	D26	AK03LFN1	SB DIODE	
	D27	AK03LFN1	SB DIODE	
	D28	SLR-342VCF33-T	LE DIODE	
	D29	SLR-342DCF33-T	LE DIODE	
	D30	SLR-342MCF33-T	LE DIODE	
	D31	SLR-342YCF33-T	LE DIODE	
	D32	SLR-342DCF33-T	LE DIODE	
	D33	SLR-342MCF33-T	LE DIODE	
	ZD21	RD15ES-T1B3	ZENER DIODE	
	ZD22	RD15ES-T1B3	ZENER DIODE	
	ZD23	RD15ES-T1B3	ZENER DIODE	
	ZD24	RD15ES-T1B3	ZENER DIODE	
	ZD25	RD15ES-T1B3	ZENER DIODE	
	ZD26	RD15ES-T1B3	ZENER DIODE	

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	ZD27	MA4047N(M)	ZENER DIODE	
	ZD28	MA4047N(M)	ZENER DIODE	
	R1	QRD187J-105	RESISTOR	1MΩ,1/8W
	R2	QRD14AJ-753Y	RESISTOR	75kΩ,1/4W
	R3	QRD14AJ-753Y	RESISTOR	75kΩ,1/4W
	R4	QRD14AJ-753Y	RESISTOR	75kΩ,1/4W
	R5	QRD14AJ-154Y	RESISTOR	150kΩ,1/4W
	R8	QRG02DJ-683	OMF RESISTOR	68kΩ,2W
	R9	QRX124J-R33X	MF RESISTOR	0.33Ω,1/2W
	R10	QRX124J-R36X	MF RESISTOR	0.36Ω,1/2W
	R11	QRD146J-820S	RESISTOR	82Ω,1/4W
⚠	R12	QRC122K-475U	COMP RESISTOR	4.7MΩ,1/2W
	R13	QRD14AJ-220Y	RESISTOR	22Ω,1/4W
	R21	QRD14AJ-220Y	RESISTOR	22Ω,1/4W
	R22	QRD14AJ-152Y	RESISTOR	1.5kΩ,1/4W
	R23	QRD123J-2R0SX	RESISTOR	2Ω,1/2W
	R24	QRG02DJ-111	OMF RESISTOR	110Ω,2W
	R25	QRSA08J-221YN	RESISTOR	220Ω,1/10W
	R26	QRG02DJ-111	OMF RESISTOR	110Ω,2W
	R27	QRSA08J-221YN	RESISTOR	220Ω,1/10W
⚠	R28	PERE0564-100J	OMF RESISTOR	
⚠	R29	PERE0564-100J	OMF RESISTOR	
	R30	QRSA08J-221YN	RESISTOR	220Ω,1/10W
	R31	QRSA08G-331YN	RESISTOR	330Ω,1/10W
	R32	QRSA08G-681YN	RESISTOR	680Ω,1/10W
	R33	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R34	QRSA08G-331YN	RESISTOR	330Ω,1/10W
	R35	QRSA08G-681YN	RESISTOR	680Ω,1/10W
	R36	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R37	QRSA08G-123YN	RESISTOR	12kΩ,1/10W
	R38	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R39	QRX016G-R10A	MF RESISTOR	0.1Ω,1W
	R41	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R42	QRSA08J-271YN	RESISTOR	270Ω,1/10W
	R43	QRSA08J-391YN	RESISTOR	390Ω,1/10W
	R44	QRSA08J-271YN	RESISTOR	270Ω,1/10W
	R45	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R46	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
	R47	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
	R48	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R49	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R51	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R52	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R53	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R54	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R55	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R56	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R57	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R58	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
⚠	C1	QFZ9037-683	F CAPACITOR	0.068μF
⚠	C2	PECA0834-476	E CAPACITOR	
⚠	C6	QCZ9039-102	CAPACITOR	0.001μF
⚠		or QCZ9016-102K	CAPACITOR	0.001μF
	C7	QFD52GK-103	MF CAP	0.01μF,400V
	C8	QEH61VM-337	E CAPACITOR	330μF,35V
	C9	QETC1VM-336	E CAPACITOR	33μF,35V
		or QETN1VM-336	E CAPACITOR	33μF,35V
⚠	C10	QCZ9039-151	CAPACITOR	150pF
⚠		or QCZ9016-151K	CAPACITOR	150pF
	C11	QEH61VM-475	E CAPACITOR	4.7μF,35V
	C21	YU40304	CAPACITOR	0.001μF

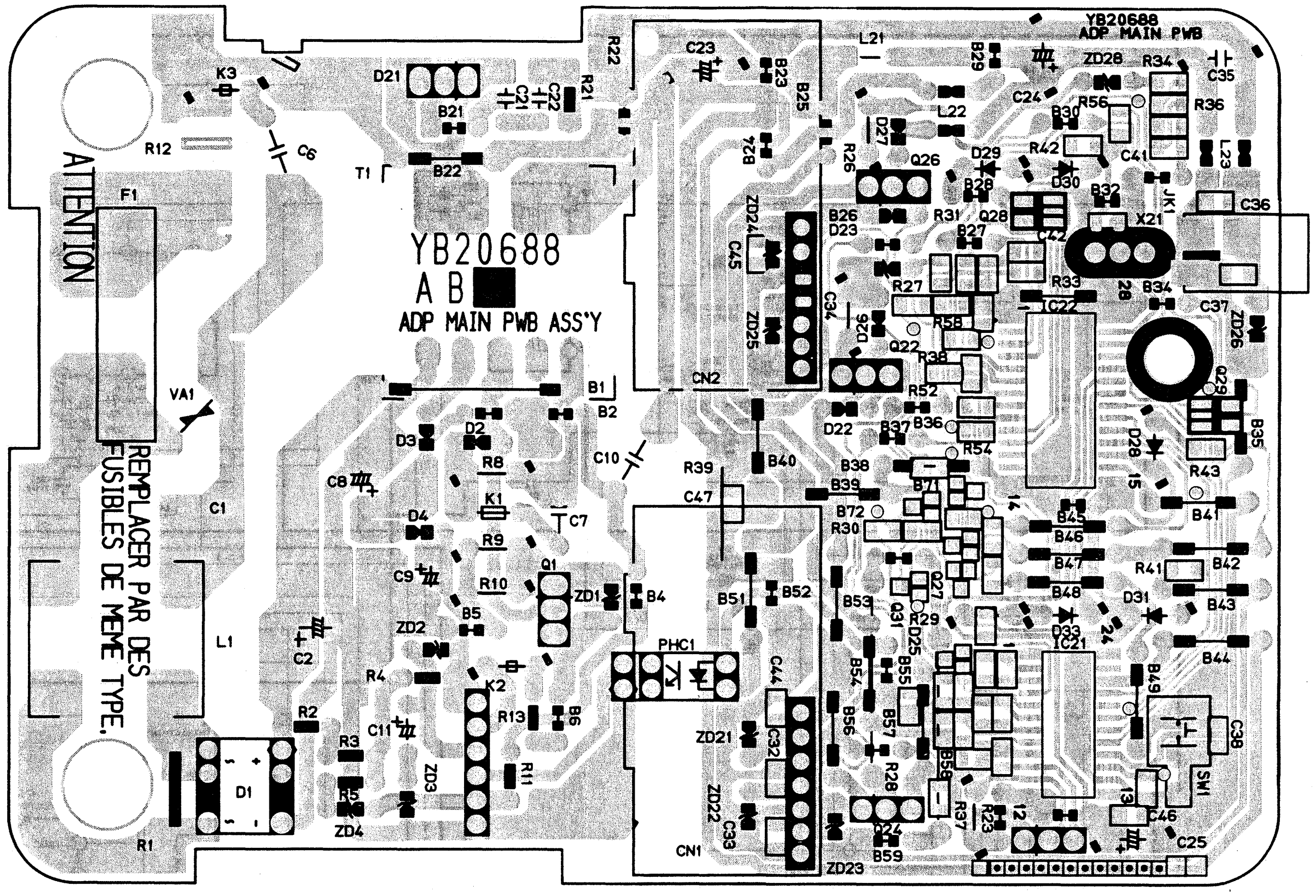
≠△	REF No.	PART No.	PART NAME, DESCRIPTION	
	C22	YU40304	CAPACITOR	0.001μF
	C23	QEGA1CM-128	E CAPACITOR	1200μF,16V
		or QEM81CM-128	E CAPACITOR	1200μF,16V
	C24	QETN1CM-337	E CAPACITOR	330μF,16V
		or QETC1CM-337	E CAPACITOR	330μF,16V
	C25	QETN1CM-107	E CAPACITOR	100μF,16V
		or QETC1CM-107	E CAPACITOR	100μF,16V
	C26	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C27	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C28	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C29	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C30	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C31	QCYA1HK-472	CAPACITOR	0.0047μF,50V
	C32	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C33	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C34	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C35	QFV11HJ-474AZ	F CAPACITOR	0.47μF,50V
	C36	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C37	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C38	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C39	QCFA1EZ-154	CAPACITOR	0.15μF,25V
	C41	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C42	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C43	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C44	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C45	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C46	QCFA1EZ-104	CAPACITOR	0.1μF,25V
△	L1	PU59707	LINE FILTER	
△		or PELN0712	COIL	
△		or YU41130	COIL	
	L21	YU40601-5	COIL	
	L23	PELN0714	TOROIDAL COIL	
		or PELN0746	TOROIDAL COIL	
△	X21	PU60782-Z	RESONATOR	
	K1	PELN0716-Z	FERRATE BEADS	
	K2	PELN0715-Z	FERRATE BEADS	
	K3	PELN0998-Z	FERRATE BEADS	
△	T1	PELN0705	SW TRANS	
△	HD1	PEMC1042-Z	FUSE CLIP	
	HS1	YQ43380	HEAT SINK(1)	
	HS2	YQ43381	HEAT SINK(2)	
	SCW1	YQ42789	SPECIAL SCREW	

– SUB BOARD ASSY –

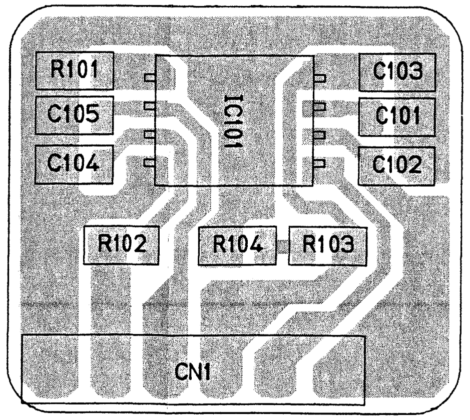
PWBA	YB20689A	SUB PWB ASS'Y	
IC101	FA5311S-XE	IC	
R101	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R102	QRSA08J-470YN	RESISTOR	47Ω,1/10W
R103	QRSA08J-684YN	RESISTOR	680kΩ,1/10W
R104	QRSA08J-824YN	RESISTOR	820kΩ,1/10W
C101	QCSA1HJ-391	CAPACITOR	390pF,50V
C102	QCFA1HZ-104	CAPACITOR	0.1μF,50V
C103	QCYA1EK-104	CAPACITOR	0.1μF,25V
C104	QCYA1HK-471	CAPACITOR	470pF,50V
C105	QCYA1HK-103	CAPACITOR	0.01μF,50V

7.3 CIRCUIT BOARDS

— MAIN CIRCUIT BOARD —


YB20688
ADP MAIN PWB
YB20688
A B
ADP MAIN PWB ASS'Y
ATTENTION
REMPLACER PAR DES
FUSIBLES DE MEME TYPE.
F1
VA1
C1
L1
D1
R1
R12
K3
C6
T1
D21
B21
B22
C21
C22
R21
R22
C23
B23
B25
L21
ZD28
R34
C35
R36
C24
L22
R56
B30
D27
R26
Q26
D29
R42
D30
C41
L23
B32
JK1
C36
X21
B26
D23
R31
Q28
B27
C42
R33
B34
C37
ZD26
IC22
R27
R58
Q22
R38
Q29
R52
D22
B37
B36
R54
D28
B35
R43
B41
B38
B39
B72
R30
B71
B45
B46
B47
R41
B42
B48
D31
B43
IC21
B44
B49
C38
SW1
C46
C25
B53
Q31
Q27
R29
D25
B54
B55
B56
B57
B58
R28
R37
R23
Q24
B59
ZD23
CN1
CN2
ZD22
C33
ZD21
C32
C44
PHC1
B51
B52
B4
ZD1
Q1
R10
R9
K1
R8
C7
D2
D3
C8
D4
C9
B5
ZD2
C2
R4
K2
R13
B6
R11
C11
R2
R3
R5
ZD3
ZD4
B40
R39
C47
C10
B1
B2
C45
ZD24
ZD25
C34
C43

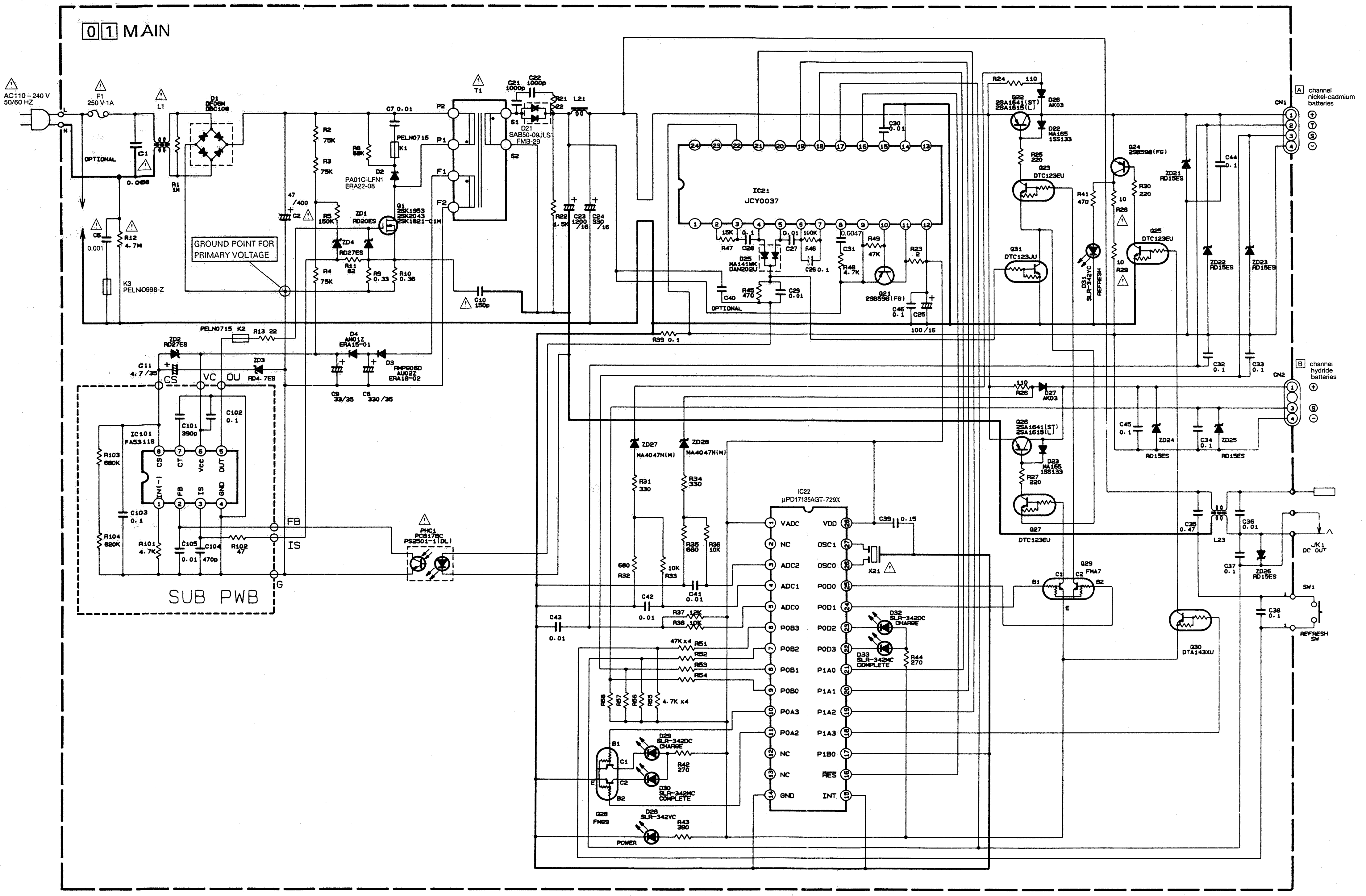
— SUB (1) CIRCUIT BOARD —


R101
C105
C104
IC101
C103
C101
C102
R102
R104
R103
CN1

7.4 MAIN SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.


01 MAIN
AC110 – 240 V 50/60 HZ
F1 250 V 1A
L1
OPTIONAL
C1
D1 DF06M D3SBC10B
GROUND POINT FOR PRIMARY VOLTAGE
K3 PELN0998-Z
T1
C21 1000p
C22 1000p
D21 SAB50-09JLS FMB-29
L21
P1
P2
F1
F2
Q1 2SK1953 2SK2043 2SK1821-01M
ZD1 RD20ES
ZD4 RD27ES
D2 PA01C-LFN1 ERA22-08
R2 75K
R3 75K
R4 75K
R9 0.33
R10 0.36
C10 150p
IC21 JCY0037
OPTIONAL
Q21 2SB598(FG)
D25 MA141WK DAN202U
R39 0.1
100/16
Q22 2SA1641(ST) 2SA1615(L)
D26 AK03
D22 MA165 1SS133
Q23 DTC123EU
Q24 2SB598(FG)
ZD21 RD15ES
Q25 DTC123EU
ZD22 RD15ES
ZD23 RD15ES
Q31 DTC123JU
D31 SLR-342VC REFRESH
CN1
A channel nickel-cadmium batteries
B channel hydride batteries
CN2
Q26 2SA1641(ST) 2SA1615(L)
D27 AK03
D23 MA165 1SS133
Q27 DTC123EU
ZD24 RD15ES
ZD25 RD15ES
L23
ZD26 RD15ES
JK1 DC OUT
SW1 REFRESH SW
Q29 FMA7
Q30 DTA143XU
PELN0715 K2
ZD2 RD27ES
D4 AM01Z ERA15-01
D3 RMPG06D AU02Z ERA18-02
C11 4.7/35
C9 33/35
C8 330/35
CS VC OU
IC101 FA5311S
SUB PWB
FB
IS
G
PHC1 PC817BC PS2501-1(DL)
ZD27 MA4047N(H)
ZD28 MA4047N(H)
IC22 µPD17135AGT-729X
VADC VDD NC OSC1 ADC2 OSC0 ADC1 PODO ADC0 POD1 POB3 POD2 POB2 POD3 POB1 P1A0 POB0 P1A1 POA3 P1A2 POA2 P1A3 NC P1B0 NC RES GND INT
X21
D32 SLR-342DC CHARGE
D33 SLR-342MC COMPLETE
D29 SLR-342DC CHARGE
D30 SLR-342MC COMPLETE
D28 SLR-342VC POWER
Q28 FMG9
47K x4
4.7K x4

1. Schematic diagram values

Unless otherwise specified.

1) All resistance values are in ohms. 1/6 W, 1/8 W. Chip resistors are 1/16 W.
K: KΩ (1000Ω), M: MΩ (1000KΩ)

2) All capacitance values are in µF, (P: PF).

3) All inductance values in µH, (m: mH).

4) All diodes are 1SS133 or MA165, (refer to parts list).

VOLTAGE CHART MAIN/SUB BOARD ASSY

Pin No.	MAIN/ SUB
IC101	
1	1.2
2	1.2
3	0
4	0
5	3.1
6	18.1
7	2.0
8	3.1
IC21	
1	–
2	0.6
3	0.6
4	–
5	2.0
6	1.5
7	1.5
8	1.5
9	7.2
10	6.6
11	4.5
12	4.5
13	0
14	0
15	4.6
16	4.5
17	0
18	0
19	0
20	–
21	4.5
22	0
23	–
24	–

Pin No.	MAIN/ SUB
IC22	
1	4.6
2	–
3	1.7
4	1.7
5	4.6
6	4.5
7	4.5
8	4.5
9	4.5
10	0
11	0
12	–
13	–
14	0
15	0
16	4.5
17	0
18	4.5
19	0
20	4.5
21	0
22	3.2
23	3.4
24	4.5
25	4.5
26	2.3
27	2.3
28	4.5
Q1	
G	3.2
S	56.5
D	0

Trans istor	B	C	E
Q21	6.6	4.5	7.2
Q22	6.9	6.9	7.3
Q23	0	6.9	0
Q24	6.3	0	6.9
Q25	0	6.3	0
Q26	6.2	6.9	7.3
Q27	0	6.2	0

Notes:

1. Voltage are measured with a digital voltmeter when VTR power is supplied.
2. Ground points are those specified during measurement.